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Monterey, California



THESIS

THE SURVIVOR BENEFIT PLAN (SBP): ASSESSING RETIREES' COST SHARE

by

Andrew A. DiPuccio

June 1999

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Richard B. Doyle
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The Survivor Benefit Plan (SBP) was created to enable a surviving beneficiary of a retired military service member to continue to receive a portion of the retiree's retirement benefits upon the death of the retiree. The cost of the plan was to be paid by both the retiree and the government, with the retiree paying 60 percent of the cost and the government paying 40 percent, for an indefinite period of time. In 1998 Congress passed legislation (P.L. 105-261) that terminated premium payments once the retiree had paid premiums for 30 years and attained 70 years of age. This thesis seeks to determine whether 30 years is an equitable amount of time for retirees to pay SBP premiums in order to achieve a balance between future benefits and future costs; and, if it is not, to determine the correct number of years to achieve this balance. Spreadsheets were developed to determine present values of benefits payable to beneficiaries and present values of payments made by retirees. The point in time in which the present value of benefits equaled the present value of costs determined the number of years that retirees should pay into the plan to maintain their 60 percent cost share. The data indicate that the number of years required to pay into the plan for the paygrades E-5 through E-9 and O-4 through O-10 varies from 13 to 21 years, with the higher number of years corresponding to the higher paygrades. Reducing paid up coverage from 30 to 21 years enables retirees to pay costs that more accurately reflect their future benefits.

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**THE SURVIVOR BENEFIT PLAN (SBP):
ASSESSING RETIREES' COST SHARE**

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Submitted in partial fulfillment
of the requirements for the degree of

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ABSTRACT

The Survivor Benefit Plan (SBP) was created to enable a surviving beneficiary of a retired military service member to continue to receive a portion of the retiree's retirement benefits upon the death of the retiree. The cost of the plan was to be paid by both the retiree and the government, with the retiree paying 60 percent of the cost and the government paying 40 percent, for an indefinite period of time. In 1998 Congress passed legislation (P.L. 105-261) that terminated premium payments once the retiree had paid premiums for 30 years and attained 70 years of age. This thesis seeks to determine whether 30 years is an equitable amount of time for retirees to pay SBP premiums in order to achieve a balance between future benefits and future costs; and, if it is not, to determine the correct number of years to achieve this balance. Spreadsheets were developed to determine present values of benefits payable to beneficiaries and present values of payments made by retirees. The point in time in which the present value of benefits equaled the present value of costs determined the number of years that retirees should pay into the plan to maintain their 60 percent cost share. The data indicate that the number of years required to pay into the plan for the paygrades E-5 through E-9 and O-4 through O-10 varies from 13 to 21 years, with the higher number of years corresponding to the higher paygrades. Reducing paid up coverage from 30 to 21 years enables retirees to pay costs that more accurately reflect their future benefits.

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I. THE SURVIVOR BENEFIT PLAN

A. BACKGROUND

The Survivor Benefit Plan (SBP) was created by Public Law (P.L.) 92-425 on September 21, 1972. [Ref. 1] The plan was enacted to enable a surviving beneficiary of a retired military service member to continue to receive a portion of the retiree's retirement benefits upon the death of the retiree. There are now more than 1,124,363 retirees enrolled in SBP [Ref. 2: p. 17], and 223,000 surviving families receiving monthly SBP checks. [Ref. 3: p. 4] (A chronology of significant events relating to the SBP is included at the end of this chapter as Table 2.)

Under the basic SBP law, each month a survivor would receive 55 percent of the amount of a retiree's monthly-retired pay. For example, if a retiree's gross monthly-retired pay were \$1000, the survivor would receive \$550, or 55 percent of \$1000, each month. The amount of gross monthly-retired pay, \$1000 in the above example, is called the "base". The base however, has a maximum and minimum amount. The maximum base amount is the retiree's gross monthly-retired pay (\$1000 per the above example). But the retiree can also elect a minimum base amount as low as \$300 a month. If the retiree chose the minimum amount of \$300, the survivor would receive \$165 per month in benefits (55 percent of \$300). Retiree premiums are based on the "base" amount chosen.

Congress' goal in creating SBP was to ensure that survivors of military retirees would be provided reasonable and continuous income. Reasonable income was deemed to be 55 percent of the retiree's pay. When the surviving spouse reached the age of 62, the annuity was subject to a Social Security offset. The offset reduced the amount of the annuity by the value of the Social Security payment received by the survivor that was attributable to the retiree based on his or her

wages earned during active military service. The reason for this was that as the employer, the government contributed to the Social Security Fund for active duty personnel. In enacting the SBP law, Congress insisted that a surviving spouse's SBP annuity be reduced or offset by the value of the surviving spouse's entitlement to Social Security survivor benefits based on the retiree's covered employment. [Ref. 2: p.41]

The Department of Defense Authorization Act of 1986 (P.L. 99-145) [Ref. 4], enacted on November 8, 1985, established a new two-tier plan, which was very similar in nature to the previous plan but used constant number figures. Under this plan, a survivor receives 55 percent of the "base" amount of retired pay until age 62, after which it is reduced to 35 percent. The reduction from 55 percent to 35 percent is again tied to the Social Security survivor benefits that are available to the surviving spouse at age 62. Their Social Security benefits are intended to negate the effect of the offset and keep their benefits at around the same dollar value as before the age 62 offset. A surviving spouse's SBP annuity will be reduced after age 62. The reduction is automatic and will take place even if the surviving spouse does not apply for early Social Security survivor benefits. The fact that the surviving spouse is entitled to benefits based on the retiree's earnings makes the reduction mandatory. [Ref.2: p.42]

The National Defense Authorization Act for Fiscal Years 1990 and 1991 (P.L. 101-189) [Ref. 5], enacted on November 29, 1989, established the Supplemental SBP (SSBP) program to provide a supplemental spouse annuity, which enables retirees to purchase supplemental coverage in increments of 5, 10, 15, or 20 percent of base pay. Prior to enactment of this law, a survivor's benefit would drop from 55 percent to 35 percent of the retiree's base pay when the survivor reached the age of 62. Under SSBP, retirees are able to pay an additional premium to enable their survivor to receive an annuity that bridges the 55 to 35 percent drop that occurs when the survivor

reaches the age of 62. As a result, a survivor's benefits at age 62 can range from 40 to 55 percent of base pay.

Congressman Bill Filner (R-CA) introduced H.R. 363 on January 19, 1999. This proposal seeks to repeal the two-tier annuity computation system applicable to annuities for surviving spouses so that there is no reduction in such an annuity when the surviving spouse reaches the age of 62. [Ref 6]

Additionally, Senator Strom Thurmond (R-SC) introduced S. 763 on April 12, 1999. This proposal seeks to increase the minimum SBP basic annuity for surviving spouses age 62 and older. Specifically, it seeks to increase the basic annuity from 35 percent to 40 effective October 1, 1999, and then to 45 percent effective October 1, 2004. [Ref. 6]

SBP coverage begins when a service member completes 20 years of service and qualifies for retirement. The cost of the annuity varies with the type of coverage elected. The different types of coverage include spouse-only, spouse and children, children only, former spouse, and insurable interests. An insurable interest is defined as a relative (other than spouse or children) or other person who has an insurable interest in a retiree. [Ref 2: p. 4]

The retiree and the government share the cost of the plan. The retiree pays 60 percent of the premium and the government pays the other 40 percent. The retiree commences payment of the premium upon receiving retired pay. Based on the retiree's 60 percent cost share, the cost for spouse-only coverage is 6.5 percent of the base retirement amount elected. As stated earlier, the retiree's base ranges from the maximum, which is the gross monthly-retired pay, to a minimum of \$300. If a retiree's gross monthly-retired pay is \$2100, it will cost \$136.50 per month ($\$2100 \times 6.5\%$) to provide a survivor a monthly annuity of \$1155 ($\$2100 \times 55\%$). Likewise, if a retiree chooses the minimum base of \$300, his cost will be \$19.50 per month ($\$300 \times 6.5\%$) to provide a survivor a monthly annuity of \$165 ($\$300 \times 55\%$). It should be noted that the \$300 low-cost base

is increased by the same percent as active duty pay beginning with the Jan. 1, 1986, active duty pay raise. [Ref. 2: p. 7-8] (See Table 1 below.)

Gross Monthly Retired Pay	Base Amount Retiree Elects	Monthly SBP Annuity	Monthly Cost
\$2100	\$2100 x 55% \$2100 x 35%	\$1155 (until age 62) \$735 (62 or older)	\$2100 x 6.5%= \$136.50
\$2100	\$500 x 55% (less than maximum) \$500 x 35%	\$275 (until age 62) \$175 (62 or older)	\$500 x 6.5%= \$32.50
\$2100	\$300 x 55% (minimum) \$300 x 35%	\$165 (until age 62) \$105 (62 or older)	\$300 x 6.5%= \$19.50

Table 1. SBP Benefits vs. Costs

With the retiree's 6.5 percent cost representing 60 percent of the total cost of the plan, the aggregate cost of the plan to the retiree and the government (x), equates to about 10.83 percent ($x=6.5/60$) of the base amount elected. The government's share of the cost then equates to 4.33 percent ($10.83-6.50$). The costs of the plan and the survivor benefits are adjusted periodically to keep pace with inflation. These adjustments are based on increases in the Consumer Price Index (CPI).

Because a spouse is the financial beneficiary with the longest potential effect of the retiree's election decision, Congress required in the original SBP law that a retiree who is married must provide written spousal notification of a decision not to participate at the maximum level. [Ref 1: p. 707] In its 1986 SBP revision, Congress took further note of the importance of this decision.

Section 721 of the Department of Defense Authorization Act of 1986 [Ref. 4] required that effective Mar. 1, 1986, a married member must be enrolled with spouse coverage based on full retired pay at the time of retirement unless that spouse has concurred in writing to another lesser election requested by the member. [Ref. 2: p. 11]

The SBP annuity will be paid as long as the surviving spouse lives. Should remarriage occur before age 55, however, the annuity will end. The retiree's premium payments will stop if his or her spouse dies before he or she does or if they are granted a divorce or their marriage is annulled. It should be noted that service members who have completed 20 years of service but are still serving on active duty are covered by the plan but do not pay into the plan until they start receiving retired pay. Additionally, the cost of SBP to a retired member is exempt from federal income tax, but the survivor's annuity is taxable.

The National Defense Authorization Act of 1998 (P.L. 105-85) [Ref. 7] allows military personnel who are retired or retiring after May 17, 1996 to voluntarily withdraw from the program. These personnel will have a one-year withdrawal window between the second and third anniversary of beginning participation. Premiums paid prior to the date of withdrawal will not be refunded. [Ref. 2: p. 12]

B. OBJECTIVES

The Retired Officers Association (TROA) has been active in trying to determine a cutoff point for retirees to stop paying premiums into the SBP. Their argument is that when the SBP was created, it was to be subsidized by the government. Members' premiums were intended to cover 60 percent of the costs of the plan, with the government paying the remaining 40 percent. [Ref. 8: p.

545] In setting the initial premium rates, DoD actuaries had to make some assumptions concerning future pay raises, retired pay COLAs, and interest rates.

As it turned out, pay raises, COLAs, etc. turned out to be lower than the actuaries had anticipated. As a result, retirees were paying premiums based on the higher figures that the actuaries anticipated rather than on actual figures. This resulted in the retirees putting more than enough into the fund to cover their intended 60 percent cost of the plan, and the government putting in less than its 40 percent share.

TROA made an issue of this discrepancy in the late 1980's. In 1989 Congress passed the Military Survivor Benefits Improvement Act. The Act was intended to help restore the balance in the cost sharing; the method chosen to restore the balance was to set premiums at a flat 6.5 percent of the amount of coverage elected. Subsequent to passage of the Military Survivor Benefits Improvement Act of 1989, the imbalance problem occurred again. As a result, DoD actuaries acknowledge that the government subsidy is now down to an average of 26 percent. [Ref. 9]

To restore this imbalance, TROA initiated a proposal to stop requiring premium payments once the retiree has paid them for 30 years and has reached 70 years of age. [Ref. 10] The problem with this initiative is that it reduces government revenues. It is difficult in the political environment of the 1990's to increase spending on survivor and retirement programs, which fall under entitlement spending. Increases to entitlement programs fall under a procedure known as pay-as-you-go (PAYGO). The basic rule of PAYGO is that legislation increasing direct spending or decreasing revenues must be fully offset so that the deficit is not increased. An increase in one area must be offset by an equal reduction in another area. The other alternative is to cover the increase by raising taxes. [Ref. 11: p. 40-41]

Since the Senate Armed Services Committee (SASC) and the House Armed Services Committee (HASC) do not have control over any substantial entitlement spending programs other

than military retirement and SBP, it makes it very difficult for them to propose increases in these programs. They would have to make offsetting cuts in the same programs, ask other committees for offsetting cuts in their programs, or propose a tax increase. Asking other committees for program cuts or tax increases is not looked upon favorably and does not happen as a matter of routine.

Additionally, there is tremendous pressure by Congress to make cost-neutral changes. Cost-neutral changes require either very little substantial change or change with a future effective date to reduce the amount of spending in the "window" of time the committees have to "score" a bill. Scoring is the process of estimating the budgetary impacts of pending and enacted legislation and comparing them with limits set in the budget resolution or in law. [Ref. 11: pp. 214-215] The window of time is five years under Senate rules and ten years under House rules. [Ref. 9]

In 1997, when TROA proposed the bill to establish the 30 year/age 70 cutoff point, the Senate advised them that they would only consider the bill if there was no cost to the government for the first five years. Five years from 1997 is 2002, which coincidentally will be 30 years from the date of the 1972 SBP enactment. This was the primary reason for choosing the 30-year portion of the equation. [Ref. 9] The HASC, however, refused to buy the cost of the program for the second five years, due to its spending window of ten years and the bill subsequently died in House/Senate conference hearings.

TROA persuaded the Senate to try again in 1998. TROA's proposal was included in the fiscal year (FY) 1999 Defense Authorization Bill (H.R. 3107). [Ref. 10: p.1] The Senate and House agreed to the terms but the effective date was pushed to 2008 due to their respective five and ten year spending windows. The FY 1999 Defense Authorization Act (P.L. 105-261) approved the 30-year paid up provision with an effective date of October 1, 2008. [Ref. 12: p. 1] Congressman Jim Saxton (R-NJ), however, proposed H.R. 601 on February 4, 1999, which seeks to change the

effective date for paid-up coverage from October 1, 2008, to October 1, 2003. The reason for this proposal was to protect retirees who were among the earlier enrollees (SBP was enacted in 1972) and will have to wait up to 36 years to attain paid-up status.

TROA had originally looked at building on the 30 year paid-up principle via a sliding scale of requirements to attain paid-up SBP status, i.e., 30 years of SBP for a 20-year retiree, 20-25 years of payments for a 30-year retiree, with proportional scaling for those with service between 20 and 30 years. The problem was that anything less than 30 years required premium terminations prior to 2003 (the SBP was enacted in September 1972), which violates the spending window rules imposed by Congress. Therefore TROA had to accept a minimum period of 30 years.

As a corollary to the sliding scale rule they sought, the TROA put in an extra requirement of also attaining the age of 70. TROA felt that, since they couldn't give a break to older retirees who had served longer by using the sliding scale, it was important not to give a disproportional break to members who served the shortest time (i.e., 15 –18 year retirees). They felt that these early retirees would pay relatively low premiums on low retired pay but that their spouses would benefit from more years of compounding relative to the value of the members' original retired pay. This is how TROA came up with the age 70 requirement in their proposal. [Ref. 9]

The Congressional Budget Office (CBO) points out that survivor life expectancies are increasing. If survivors are receiving benefits for a longer period of time, and thus a greater aggregate total of benefits, the retiree's premiums might have to increase to cover the cost of these increased benefits. The CBO is interested in computations that either support or refute this provision. If refuted, they would like to know what the ideal cutoff point is. [Ref. 13]

C. THE RESEARCH QUESTION

What is the appropriate cutoff point for SBP premiums? Is it the 30-year/age 70 criteria proposed by TROA? If not, what should the cutoff point be? To answer this question I have compiled information that will assist in the decision making process. Specifically, I have determined the average age at which retirees in the different paygrades retire, life expectancies of retirees and their corresponding spouses, and the average difference in their ages, to help determine how long a survivor will expect to receive benefits. I have also determined a rate of return for premiums invested in this plan. Using this information I have then determined a break-even point that takes into consideration the amount of premiums paid into the plan relative to the amount of benefits paid out.

D. SCOPE, LIMITATIONS, AND ASSUMPTIONS

As stated earlier, there are five basic scenarios from which a retiree can choose that will determine the applicable cost of the plan: spouse-only coverage, spouse and children coverage, children-only coverage, insurable interest coverage, and former spouse coverage. Due to the time constraints imposed, I have limited the scope of this thesis to spouse-only coverage of members retired without disability pay. The scope of coverage will also be limited to active duty members who retired in paygrades E-5 through E-9 and O-4 through O-10. The reason for limiting to these paygrades is that retirement at these paygrades, with few exceptions, coincides with at least 20 years of active service. I have also excluded members of the Armed Forces Reserves due to their difference in eligibility for retirement pay (age 60 plus 20 years of service vice only 20 years of service for active duty members). Currently over 95 percent of military retirees are male. I have

limited the scope of this research from the standpoint of a retired male member. However, there is an increased number of women now serving in the military, [Ref 3: p. 206], and the same computational principles can be applied to determining an appropriate cutoff point from the standpoint of a retired female member.

Information on life expectancies, ages of retirees, and age differences between retirees and their spouses will be taken from DoD Statistical Report on the Military Retirement System, Fiscal 1997, [Ref. 3] which was provided by the Defense Manpower Data Center (DMDC). The retirees' contributions to the plan will be based on the current rate of 6.5 percent of retired pay. Cost of Living Allowance (COLA) rates for this discussion will consist of the average rate for the past forty years. The rates have been provided by the Retired Activities Branch, Navy Personnel Command. [Ref. 14] In computing the rates of return on the retirees and government's contributions, I will use a weighted average yield of Treasury Notes, and Bonds, since this is where military retirement funds are invested. [Ref. 15]

For computational purposes, I will assume the retiree in each of the considered paygrades retired in calendar year 1999, and base their retirement pay on the calendar year 1999 pay chart, Table 3. [Ref. 16]

**A CHRONOLOGY OF SIGNIFICANT EVENTS
ASSOCIATED WITH THE SURVIVOR BENEFIT PLAN (SBP)**

<u>DATE</u>	<u>EVENT</u>
September 21, 1972	Establishment of the Survivor Benefit Plan by Public Law 92-425.
November 8, 1985	Public Law 99-145 establishes a two-tier benefit system and elimination of Social Security offset (Section 711) and requires spousal concurrence for SBP elections (Section 721).
November 29, 1989	Public Law 101-189 (Section 1401 titled "Military Survivor Benefits Improvement Act of 1989") revises premium computation for SBP annuities (Section 1402) and establishes a Supplemental SBP (Section 1404).
1997	The Retired Officers Association (TROA) proposes to Congress a bill that would terminate a retiree's contributions to the SBP after the retiree has made them for 30 years and attained age 70.
November 18, 1997	Public Law 105-85 gives military personnel retired or retiring after 17 May, 1996 a one-year withdrawal window between the second and third anniversary of beginning participation.
October 17, 1998	Public Law 105-261 approves the 30 year/age 70 provision to terminate retiree's contributions to the SBP.
January 19, 1999	H.R. 363 introduced to repeal the two-tier annuity system applicable to spouses upon reaching the age of 62.

Table 2. SBP Chronology of Significant Events

February 4, 1999

H.R. 601 introduced to change the effective date of paid-up coverage from October 1, 2008, to October 1, 2003.

April 12, 1999

S. 763 introduced to increase SBP annuity from 35 to 40 percent effective October 1, 1999, and to 45 percent effective October 1, 2004.

II. DATA

A. BACKGROUND

To support the computations used to find the ideal duration of retiree contributions to the SBP, this chapter presents and describes tables of information that were used in the spreadsheet computations in the next chapter. The tables consist of the 1999 pay chart, life expectancies of retirees and their spouses, average age differences between them, average ages at the time of enlistment (enlisted) or commissioning (officers), and the average ages of retirement of retired members in the ranks E-5 through E-9 and O-4 through O-10. The tables also include COLA and Treasury Bill rates that were required to perform the computations.

The approach to determining the number of years a retiree should pay premiums is as follows. First, the ages at which retirees in the above-mentioned ranks entered and retired from military service were determined. This facilitated an accurate computation of their retirement benefits and SBP premiums. The value of retiree and government inputs was then computed based on the retiree's retired pay and the numbers of years they both contributed to the plan (from retirement date until the retiree's death), COLA rates, and the rate of return their investment earned. Surviving spouse's expected benefits were then computed based on their ages at the time of the retiree's death and their life expectancies. A point at which the value of survivor benefits equaled the value of retiree and government contributions for each of the aforementioned ranks of the retirees was then determined. The number of years required for the retiree to pay into the program to reach this equilibrium point was determined.

For example, if it was determined that the value of total benefits payable to a surviving spouse equaled the value of total payments of a 67-year-old retired O-5 (retired at age 44), a cutoff

point for O-5's at 23 years (67-44) would be determined. To ensure that the comparisons were made in constant terms, all of the values of the dollar figures were computed using present values. The methodology stated above is described in greater detail in the next chapter.

B. LIFE EXPECTANCIES

Table 4 lists life expectancies for retired officer and enlisted males. Life expectancies for female spouses use the same data in this table, except that "setback factors" are used. The "setback factors" are as follows: up to age 59, six years; ages 60-79, five years; ages 80-89, four years; ages 90-99, three years; ages 100-102, two years; and ages 103-107, one year. For example, to find the life expectancy of a 50-year-old female, the life expectancy data for a 44-year-old male (six-year setback) are used. [Ref. 17] Life expectancy data will be used to determine the length of time a retiree will pay SBP premiums and the length of time a survivor will receive benefits.

C. AGE DIFFERENCES

Table 5 lists the average age difference between a retiree and his spouse. This information is based on a male retiree and a female spouse. Since married couples are of different ages, this data will be used to help determine the length of time a survivor will receive benefits (the difference between the survivor's age at the time of the retiree's death and the survivor's age at the time of the survivor's death).

Table 5 also includes explanatory information that is not used for computational purposes. This information includes the total number of retired persons at various ages, the number of total retired persons electing SBP coverage, and the total number of SBP covered persons whose

spouses' ages are known. Although obtaining information on service members is easily accomplished by conducting checks of records, information on spouses is not as readily available. This explains the difference in the number of members electing SBP (column 3) and the number of members electing SBP with known spouse ages on record (column 4). [Ref. 18]

D. RETIREMENT AGES

Table 6 lists the average age at which a military member of various paygrades retires. As stated earlier, this age was used when performing computations based on the length of time a member pays SBP premiums (from retirement date until date of death). The ages used for computational purposes were rounded to the nearest whole number.

E. COLA

Table 7 lists the COLA increases for the past 30 years. COLA rates are important because a retiree's retired pay increases each year based on the COLA rate. The retiree pays 6.5 percent of his retired pay as a contribution. Consequently, with a greater dollar amount of retired pay, the retiree's contribution to the plan increases by 6.5 percent of the increase in retired pay. Survivor benefits are also increased by COLA rates. For the purpose of this thesis a COLA rate of 4.42 percent, which is the 30-year average, was used.

F. INVESTMENT OF RETIREMENT FUNDS

The DoD military retirement account is held in a trust fund that is invested in government securities. Specifically, the fund is invested in Treasury Bills, Notes, and Bonds. The primary

difference among the three is the number of years until maturity. Bills mature one year or less from the date of issue. Notes mature ten years or less from the date of issue. Bonds mature ten to thirty years from the date of issue. Table 8 lists the yields of the Bills, Notes, and Bonds as of December 31, 1998. It should be noted that, since Bills are short term in duration and Notes and Bonds are longer term in duration, actuaries use the yield on Notes and Bonds when conducting computations. [Ref. 19] This thesis will use the weighted average yield of Notes and Bonds as of December 31, 1998.

Pay Grade	Over 10	Over 12	Over 14	Over 16	Over 18	Over 20	Over 22	Over 24	Over 26
O-10	8,425.80	8,892.60	8,892.60	9,528.90	9,528.90	10,167.00	10,167.00	10,167.00	10,800.00
O-9	7,466.10	7,776.90	7,776.90	8,425.80	8,425.80	8,892.60	8,892.60	8,892.60	9,528.90
O-8	7,129.20	7,466.10	7,466.10	7,776.90	8,114.40	8,425.80	8,633.70	8,633.70	8,633.70
O-7	6,172.50	6,172.50	6,481.20	7,129.20	7,619.70	7,619.70	7,619.70	7,619.70	7,619.70
O-6	4,536.60	4,536.60	4,690.80	5,432.40	5,709.60	5,834.40	6,172.50	6,381.00	6,694.20
O-5	4,008.00	4,224.30	4,507.50	4,845.00	5,122.20	5,277.90	5,462.40	5,462.40	5,462.40
O-4	3,855.30	4,071.90	4,257.30	4,444.80	4,566.60	4,566.60	4,566.60	4,566.60	4,566.60
E-9	2,877.30	2,942.10	3,008.40	3,078.00	3,147.00	3,207.60	3,375.90	3,507.30	3,704.70
E-8	2,482.50	2,547.30	2,613.60	2,682.90	2,743.80	2,811.30	2,976.60	3,108.90	3,308.40
E-7	2,149.50	2,216.70	2,316.60	2,382.60	2,448.60	2,480.40	2,647.20	2,778.90	2,976.60
E-6	1,911.60	2,010.00	2,073.30	2,140.20	2,172.60	2,172.60	2,172.60	2,172.60	2,172.60
E-5	1,746.30	1,811.10	1,844.10	1,844.10	1,844.10	1,844.10	1,844.10	1,844.10	1,844.10

Table 3. 1999 Military Pay Chart

AGE OFFICERS ENLISTED			AGE OFFICERS ENLISTED		
30	49.98	46.06	70	14.03	12.30
31	49.00	45.11	71	13.34	11.71
32	48.03	44.15	72	12.67	11.14
33	47.05	43.20	73	12.01	10.59
34	46.07	42.24	74	11.37	10.06
35	45.09	41.28	75	10.75	9.55
36	44.12	40.33	76	10.15	9.06
37	43.14	39.37	77	9.57	8.59
38	42.16	38.42	78	9.01	8.15
39	41.19	37.47	79	8.47	7.72
40	40.21	36.52	80	7.95	7.32
41	39.24	35.57	81	7.45	6.94
42	38.27	34.62	82	6.98	6.57
43	37.30	33.68	83	6.53	6.22
44	36.34	32.74	84	6.10	5.88
45	35.38	31.81	85	5.70	5.56
46	34.43	30.88	86	5.32	5.26
47	33.48	29.96	87	4.97	4.97
48	32.54	29.04	88	4.64	4.69
49	31.61	28.14	89	4.33	4.43
50	30.68	27.25	90	4.04	4.18
51	29.76	26.36	91	3.78	3.94
52	28.85	25.49	92	3.54	3.72
53	27.94	24.64	93	3.31	3.50
54	27.04	23.79	94	3.10	3.30
55	26.15	22.96	95	2.91	3.11
56	25.27	22.14	96	2.74	2.94
57	24.40	21.34	97	2.58	2.78
58	23.53	20.55	98	2.44	2.63
59	22.67	19.77	99	2.32	2.51
60	21.82	19.01	100	2.23	2.39
61	20.97	18.27	101	2.14	2.27
62	20.14	17.54	102	2.05	2.15
63	19.32	16.82	103	1.95	2.04
64	18.51	16.13	104	1.85	1.92
65	17.72	15.45	105	1.75	1.80
66	16.95	14.79	106	1.63	1.67
67	16.19	14.15	107	1.49	1.51
68	15.46	13.51	108	1.30	1.31
69	14.74	12.90	109	1.01	1.01
			110	0.50	0.50

Table 4. Nondisability Retired Life Expectations [Ref. 3: p.288]

AGE	TOTAL RETIRED	TOTAL ELECTING SBP	TOTAL WITH KNOWN SPOUSE AGE	AVERAGE SPOUSE AGE	AVERAGE AGE DIFFERENCE
32	1809	1210	347	32.10	-0.10
33	2075	1360	391	33.16	-0.16
34	2458	1589	484	34.18	-0.18
35	3011	1864	622	34.94	0.06
36	4088	2495	872	35.65	0.35
37	5511	3208	1268	36.45	0.55
38	8820	5079	2180	37.70	0.30
39	14844	8593	4148	38.07	0.93
40	20401	11637	5954	39.07	0.93
41	25106	14280	7482	39.80	1.20
42	28369	16062	8623	40.61	1.39
43	31727	18092	10069	41.46	1.54
44	34731	19897	11369	42.36	1.64
45	36767	20847	12318	43.23	1.77
46	38862	22152	13493	44.08	1.92
47	38387	21753	13633	44.99	2.01
48	40217	22116	14083	45.83	2.17
49	44741	23829	15373	46.74	2.26
50	48954	26272	17161	47.66	2.34
51	51901	27973	18629	48.63	2.37
52	52272	28204	19188	49.44	2.56
53	36897	20068	13805	50.40	2.60
54	38035	20656	14508	51.30	2.70
55	40720	21829	15516	52.17	2.83
56	43605	22967	16674	53.04	2.96
57	40490	21101	15300	53.91	3.09
58	40368	21480	15821	54.99	3.01
59	40822	22425	16928	55.81	3.19
60	47990	28320	21399	56.76	3.24
61	58289	37154	28492	57.56	3.44
62	58589	37493	28998	58.51	3.49
63	58862	38289	29838	59.41	3.59
64	58235	37775	29882	60.35	3.65
65	55212	35138	27997	61.30	3.70
66	57238	36319	29141	62.27	3.73
67	58495	37299	29968	63.17	3.83
68	62224	39451	31651	64.25	3.75
69	58358	36927	29365	65.08	3.92
70	49296	31748	25178	65.97	4.03

Table 5. Retiree and Spouse Age Difference [Ref. 16]

71	39642	25379	19813	66.76	4.24
72	32992	21543	16766	67.70	4.30
73	32336	21668	16986	68.90	4.10
74	34496	23757	18739	69.91	4.09
75	34124	23856	18798	70.81	4.19
76	33552	24621	18903	71.76	4.24
77	35804	26176	20364	72.80	4.20
78	33550	24951	19462	73.60	4.40
79	30939	23256	17677	74.36	4.64
80	27158	20647	15543	75.26	4.74
81	22332	17194	12583	75.85	5.15
82	17459	13459	9748	76.68	5.32
83	13884	10710	7504	77.34	5.66
84	10759	8312	5579	77.99	6.01
85	8092	6257	4177	77.67	7.33
86	6098	4657	2897	78.88	7.12
87	5013	3711	2333	80.29	6.71
88	4059	3054	1846	81.16	6.84
89	3156	2292	1341	82.01	6.99
90	2560	1849	987	82.23	7.77
91	2034	1451	763	82.60	8.40
92	1401	977	478	83.72	8.28
93	1093	769	335	84.53	8.47
94	769	516	238	84.96	9.04
95	562	340	135	85.04	9.96
96	424	235	109	86.07	9.93
97	260	154	69	88.61	8.39
98	257	147	50	84.24	13.76
99	163	85	27	83.44	15.56
100	103	48	10	83.40	16.60
101	79	36	8	88.00	13.00
102	52	19	4	88.00	14.00
103	41	17	3	85.33	17.67
104	31	8	2	91.50	12.50
105	16	5	1	97.00	8.00

Table 5. Continued

Paygrade	Average Age	Rounded Age
O-10	57.9	58
O-9	56.6	57
O-8	55.2	55
O-7	52.6	53
O-6	50.4	50
O-5	45.9	46
O-4	43.3	43
E-9	45.8	46
E-8	42.6	43
E-7	41.3	41
E-6	40.5	41
E-5	40.4	40

Table 6. Average Age of Retirees at Time of Retirement by Paygrade [Ref. 3: p. 99]

1958	6 %	1974	5.5 %	1980	7.7 %	1990	5.4 %
1963	5 %	1975	7.3 %	1981	4.4 %	1991	3.7 %
1965	4.4 %	1975 (2 nd)	5.1 %	1982	8.7 %	1992	3.0 %
1966	3.7 %	1976	5.4 %	1983	3.3 %	1993	2.6 %
1968	3.9 %	1977	4.8 %	1984	3.5 %	1994	2.6 %
1969	5.3 %	1977 (2 nd)	4.3 %	1985	Cancelled	1995	2.6 %
1970	5.6 %	1978	2.4 %	1986	1.3 %	1996	2.9 %
1971	4.5 %	1978 (2 nd)	4.9 %	1987	4.2 %	1997	2.1 %
1972	4.8 %	1979	3.9 %	1988	4.0 %	1998	1.3 %
1973	6.1 %	1979 (2 nd)	6.9 %	1989	4.7 %	Average	4.42%

Table 7. Cost of Living Allowance (COLA) Rates [Ref. 14]

Type	Percent of Total Holdings	Yield
Treasury Bills	6.70%	4.448%
Treasury Notes	34.80%	5.975%
Treasury Bonds	58.50%	9.170%
Weighted Average Yield (All Securities)		7.751%
Weighted Average Yield (Notes and Bonds)		8.067%

Table 8. Government Security Rates [Ref. 15]

III. COMPUTATIONS

A. SPREADSHEET DESCRIPTION

It is important to understand how each column in the spreadsheets (Tables 9.1 and 9.2) was determined. Table 9.1 describes the variables that were considered in determining the present value of the contributions made by the retiree and the government on behalf of the retiree. Table 9.2 describes the variables that were considered in determining the present value of the benefits that will be paid to the survivor. The point at which the ending value of the aggregate present value of benefits (Table 9.2, column 8) approximates the aggregate present value of contributions (Table 9.1, column 13) will determine the number of years that payments should be made into the SBP if the retiree is to contribute 60 percent of the cost of the plan.

Table 9.1 will be described in detail first, followed by a description of Table 9.2. Column 1 is the average age of retirees at the time of retirement and the number of years of service for the paygrades considered in this thesis. The retirement age information is taken from Table 6. The number of years of service is based on the difference between the average retirement age and their average age upon entering the service. As of March 1999, the average ages at time of enlistment/commissioning for the current active duty force are age 20 for enlisted members and age 23 for officers. [Ref. 20]

Columns 2 and 3 denote the end of each year following the retiree's retirement and the age of the retiree at the end of each year following retirement. These numbers will be

referred to later in the computation when determining the potential cutoff point for years of SBP premium payments.

For example, if the value of benefits that will be paid to the survivor equals the value of the contributions of the retiree at the end of year 24, then 24 years will be the cutoff point for SBP premiums. These numbers will also assist in determining the value of the annuity to the spouse at the time of the retiree's death. For example, if a retiree dies at the age of 65, the surviving spouse will receive the appropriate portion (35 or 55 percent) of the base pay that would be received by the retiree at age 65.

Column 4 is the value of the retiree's pay during each year of retirement. The value of retirement pay is computed as follows: $2.5\% \times \text{number of years service} \times \text{yearly base pay}$. For example, a member that retires at 22 years of service will receive 55 percent of base pay ($2.5\% \times 22$) at the time of retirement. A member that retires at 30 years of service will receive 75 percent of base pay ($2.5\% \times 30$). This is the amount of retirement pay for year one. For the E-5 paygrade, the amount in this column is equal to the base pay from Table 3 (E-5 over 20) times 12 months times 50 percent ($2.5\% \times 20$). Each subsequent year's retirement pay is increased by 4.42 percent of the previous year's pay to reflect the COLA increase reflected in Table 7.

Column 5 and column 6 are the retiree's and the government's cost of the SBP. They are determined by multiplying the value of the retiree's yearly retired pay (column 4) by 6.5 percent for the retiree and 4.33 percent for the government.

Column 7 is a summation of the retiree and government's (column 5 plus 6) contributions to the SBP for each year.

Column 8 is the aggregate contribution by both the retiree and the government to the SBP, as well as interest earned on the contribution. It is determined by adding the beginning value of column 7 and the total of each successive contribution from column 7 and the total value of interest previously earned from column 10.

Column 9 is the average aggregate contribution. Since contributions to the SBP are made monthly, vice in total at the beginning of the year, the return on the investment is based on the average aggregate contribution [the aggregate contribution (column 8) divided by 2]. For example, for the first year, the interest rate of 8.067 percent is applied to the average aggregate contribution of \$599.15 (\$1198.30 divided by 2) vice the aggregate contribution of \$1198.30 for the first year. The interest earned will be \$48.33 ($8.067\% \times \599.15). The average aggregate contribution for each successive year is computed by adding the previous year's aggregate contribution (column 8) plus the previous year's interest earned (column 10) to one half of the current years total contribution. For year two it would equal \$1872.26, which is the sum of the aggregate contribution from year 1 (\$1198.30), the interest earned in year 1 (\$48.33), and one half of year two's contribution (\$625.63). Accordingly, the interest earned during year two is equal to \$151.04 ($8.067\% \times \1872.26).

Column 10 is the interest earned based on the rate of return (from Table 8) for government investments in Treasury Notes and Bonds. As stated earlier in Chapter II, Section F, the DoD military retirement account is held in a trust fund that is invested in Treasury Notes and Bonds. The rate of return used for contributions to the SBP is the weighted average yield for Notes and Bonds.

Column 11 is the end of year aggregate value of the contributions. It is the sum of (column 8) plus the dollar value of the interest earned on these contributions (column 10). This number represents the total value of the contributions to the SBP.

Columns 12 and 13 are the present value factors and the present values of the end of year aggregate contributions. When comparing the future benefits paid out to the survivor to the contributions made by the retiree to the SBP, it is important to make the comparison in constant terms. This is accomplished by using the present value factors for both contributions made by the retiree, and benefits paid to the survivor. The present value factors are as of the date of retirement. The numbers in this column will be crucial in determining the cutoff point for SBP payments. The year (column 2) that the aggregate present value of future payments equals the aggregate present value of contributions will determine the year of the SBP premium cutoff point. To take a more conservative approach, the retiree's payment year will be rounded up to the next higher whole number.

Table 9.2 will now be described in detail. Column 1 is the retiree's age at death based on life expectancy tables (Table 4). The life expectancy is based on the retiree's age at the time of retirement. For example, the life expectancy of an enlisted member retiring at age 40 is 37 years. Therefore, this retiree's age at death is 77.

Column 2 is the spouse's age at the time of the retiree's death. This was determined by using the information in Table 5. The retiree's age is listed in the first column of the table. To find the age of the spouse, move horizontally across the table to the number listed in the average spouse age column. For example, by looking at the age

77 in the first column and moving horizontally across the table, you will see that the number in the average spouse age column is 73 (72.80 rounded up).

Column 3 is the spouse's age at the time of her death. This was determined by using the life expectancy tables (Table 4) and applying the setback factors mentioned earlier in Chapter 2, Section B. For example, to find the life expectancy of a 73-year-old female, the data for a 68-year-old male are used. In this case, the life expectancy of a 68-year-old male is 14 years. Therefore the life expectancy of a 73-year-old woman is 14 years. Her age at death is 87.

Column 4 is the value of the retiree's retirement pay at the time of death. It is the base that will be used to determine the annuity payable to the survivor.

Column 5 is the amount of survivor benefits that will be paid to the survivor each year that she outlives the retiree. It is determined by taking the value of the retiree's retirement pay at the age of death (columns 3 and 4), and multiplying it by 55 percent if the survivor is under the age 62, or by 35 percent if the survivor is 62 or older. For example, if a retiree dies at age 77, and his or her annual retirement pay was \$52,498.70, the survivor will receive 35 percent of this as a benefit or \$18,374.55 ($\$52,498.70 \times 35\%$) if 62 or older. If the survivor is under the age of 62, she will receive \$28,874.29 ($\$52,498.70 \times 55\%$).

Columns 6 and 7 are the present value factors and the present values of each year's benefits.

Column 8 is the aggregate present value of the total benefits. It is determined by adding the beginning value in column 7 to all succeeding values. As mentioned earlier, this

number is important because it is the end number which will be compared against the aggregate present value of contributions (Table 9.1, column 13) in determining the cutoff point for retiree contributions to the SBP.

B. FINDINGS

The present values determined in Tables 9.1 and 9.2 indicate that 13 years is the number of years that a retired E-5 should pay premiums into the SBP. This was determined by taking the aggregate present value of all benefits payable to the surviving spouse until her death, (\$11,760.40) from column 8 of table 9.2, and comparing this number to aggregate present value of payments made by the retiree listed in column 13 of table 9.1. \$11,760.40 falls between two numbers in column 13 (\$11,537.84 and \$12,301.31). As mentioned earlier, to take a conservative approach, the higher number is chosen. In this case, the number used from column 13 is \$12,301.31. Moving horizontally to the left in this table to column 2, you will see that \$12,301.31 corresponds to year 13. Therefore, the number of years for an E-5 to pay into the SBP is 13.

The above computations undertaken for the E-5 paygrade were repeated for paygrades E-6 through E-9 and O-4 through O-10. This resulted in the determination of an appropriate cutoff point for each of these paygrades. These computations are included in the Appendix.

Average Retirement Age/Number of Years of Service	End of Year	Age at End of Year	Yearly Retired Pay	Retiree Cost (6.5% x column 4)	Govt. Cost (4.33% x column 4)	Each Year's Total Contribution	Aggregate Contribution	Average Aggregate Contribution	Return Based on Rate of Return (Table 8)	End of Year Aggregate Value of Contributions	Present Value Factor	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age 40												
20 Years									8.067%			
	1	41	\$11,064.60	\$719.20	\$479.10	\$1,198.30	\$1,198.30	\$599.15	\$48.33	\$1,246.63	0.925	\$1,153.54
	2	42	\$11,553.66	\$750.99	\$500.27	\$1,251.26	\$2,497.89	\$1,872.26	\$151.04	\$2,648.93	0.856	\$2,268.09
	3	43	\$12,064.33	\$784.18	\$522.39	\$1,306.57	\$3,955.49	\$3,302.21	\$266.39	\$4,221.88	0.792	\$3,344.96
	4	44	\$12,597.57	\$818.84	\$545.47	\$1,364.32	\$5,586.20	\$4,904.04	\$395.61	\$5,981.81	0.733	\$4,385.43
	5	45	\$13,154.38	\$855.03	\$569.58	\$1,424.62	\$7,406.43	\$6,694.12	\$540.01	\$7,946.44	0.678	\$5,390.72
	6	46	\$13,735.81	\$892.83	\$594.76	\$1,487.59	\$9,434.03	\$8,690.24	\$701.04	\$10,135.07	0.628	\$6,362.03
	7	47	\$14,342.93	\$932.29	\$621.05	\$1,553.34	\$11,688.41	\$10,911.74	\$880.25	\$12,568.66	0.581	\$7,300.50
	8	48	\$14,976.89	\$973.50	\$648.50	\$1,622.00	\$14,190.66	\$13,379.66	\$1,079.34	\$15,269.99	0.537	\$8,207.25
	9	49	\$15,638.86	\$1,016.53	\$677.16	\$1,693.69	\$16,963.68	\$16,116.84	\$1,300.15	\$18,263.83	0.497	\$9,083.34
	10	50	\$16,330.10	\$1,061.46	\$707.09	\$1,768.55	\$20,032.38	\$19,148.10	\$1,544.88	\$21,577.06	0.460	\$9,929.80
	11	51	\$17,051.89	\$1,108.37	\$738.35	\$1,846.72	\$23,423.78	\$22,500.42	\$1,815.11	\$25,238.88	0.426	\$10,747.65
	12	52	\$17,805.59	\$1,157.36	\$770.98	\$1,928.35	\$27,167.23	\$26,203.06	\$2,113.80	\$29,281.03	0.394	\$11,537.84
	13	53	\$18,592.59	\$1,208.52	\$805.06	\$2,013.58	\$31,294.61	\$30,287.82	\$2,443.32	\$33,737.93	0.365	\$12,303.11
	14	54	\$19,414.39	\$1,261.94	\$840.64	\$2,102.58	\$35,840.50	\$34,789.21	\$2,806.45	\$38,646.95	0.337	\$13,038.96
	15	55	\$20,272.50	\$1,317.71	\$877.80	\$2,195.51	\$40,842.46	\$39,744.71	\$3,206.21	\$44,048.67	0.312	\$13,751.67
	16	56	\$21,168.55	\$1,375.96	\$916.60	\$2,292.55	\$46,341.22	\$45,194.94	\$3,645.88	\$49,987.10	0.289	\$14,440.28
	17	57	\$22,104.20	\$1,436.77	\$957.11	\$2,393.88	\$52,380.98	\$51,184.04	\$4,129.02	\$56,510.00	0.267	\$15,105.59
	18	58	\$23,081.20	\$1,500.28	\$999.42	\$2,499.69	\$59,009.69	\$57,759.84	\$4,659.49	\$63,669.18	0.247	\$15,748.40
	19	59	\$24,101.39	\$1,566.59	\$1,043.59	\$2,610.18	\$66,279.36	\$64,974.27	\$5,241.47	\$71,520.83	0.229	\$16,369.47
	20	60	\$25,166.67	\$1,635.83	\$1,089.72	\$2,725.55	\$74,246.38	\$72,883.61	\$5,879.52	\$80,125.91	0.212	\$16,969.53
	21	61	\$26,279.04	\$1,708.14	\$1,137.88	\$2,846.02	\$82,971.93	\$81,548.92	\$6,578.55	\$89,550.48	0.196	\$17,549.30
	22	62	\$27,440.57	\$1,783.64	\$1,188.18	\$2,971.81	\$92,522.29	\$91,036.38	\$7,343.91	\$99,866.20	0.181	\$18,109.45
	23	63	\$28,653.45	\$1,862.47	\$1,240.69	\$3,103.17	\$102,969.36	\$101,417.78	\$8,181.37	\$111,150.74	0.168	\$18,650.65
	24	64	\$29,919.93	\$1,944.80	\$1,295.53	\$3,240.33	\$114,391.06	\$112,770.90	\$9,097.23	\$123,488.29	0.155	\$19,173.53
	25	65	\$31,242.39	\$2,030.76	\$1,352.80	\$3,383.55	\$126,871.84	\$125,180.07	\$10,098.28	\$136,970.12	0.144	\$19,678.73
	26	66	\$32,623.30	\$2,120.51	\$1,412.59	\$3,533.10	\$140,503.22	\$138,736.67	\$11,191.89	\$151,695.11	0.133	\$20,168.83
	27	67	\$34,065.25	\$2,214.24	\$1,475.03	\$3,689.27	\$155,384.38	\$153,539.74	\$12,386.05	\$167,770.43	0.123	\$20,638.41
	28	68	\$35,570.94	\$2,312.11	\$1,540.22	\$3,852.33	\$171,622.76	\$169,696.60	\$13,689.42	\$185,312.19	0.114	\$21,094.04
	29	69	\$37,143.17	\$2,414.31	\$1,608.30	\$4,022.61	\$189,334.79	\$187,323.49	\$15,111.39	\$204,446.18	0.105	\$21,534.24
	30	70	\$38,784.90	\$2,521.02	\$1,679.39	\$4,200.40	\$208,646.58	\$206,546.38	\$16,662.10	\$225,308.68	0.097	\$21,959.55
	31	71	\$40,499.19	\$2,632.45	\$1,753.62	\$4,386.06	\$229,694.74	\$227,501.71	\$18,352.56	\$248,047.30	0.090	\$22,370.45
	32	72	\$42,289.26	\$2,748.80	\$1,831.12	\$4,579.93	\$252,627.23	\$250,337.27	\$20,194.71	\$272,821.94	0.083	\$22,767.45
	33	73	\$44,158.44	\$2,870.30	\$1,912.06	\$4,782.36	\$277,604.30	\$275,213.12	\$22,201.44	\$299,805.74	0.077	\$23,151.01
	34	74	\$46,110.25	\$2,997.17	\$1,996.57	\$4,993.74	\$304,799.48	\$302,302.61	\$24,386.75	\$329,186.23	0.071	\$23,521.58
	35	75	\$48,148.32	\$3,129.64	\$2,084.82	\$5,214.46	\$334,400.69	\$331,793.46	\$26,765.78	\$361,166.47	0.066	\$23,879.60
	36	76	\$50,276.48	\$3,267.97	\$2,176.97	\$5,444.94	\$366,611.42	\$363,888.94	\$29,354.92	\$395,966.34	0.061	\$24,225.50

Table 9.1 Present Value of Payments for E-5

37	77	\$52,498.70	\$3,412.42	\$2,273.19	\$5,685.61	\$401,651.95	\$398,809.14	\$32,171.93	\$433,823.88	0.057	\$24,559.69
38	78	\$54,819.14	\$3,563.24	\$2,373.67	\$5,936.91	\$439,760.79	\$436,792.34	\$35,236.04	\$474,996.83	0.052	\$24,882.55
39	79	\$57,242.14	\$3,720.74	\$2,478.58	\$6,199.32	\$481,196.15	\$478,096.49	\$38,568.04	\$519,764.20	0.048	\$25,194.48
40	80	\$59,772.25	\$3,885.20	\$2,588.14	\$6,473.33	\$526,237.53	\$523,000.87	\$42,190.48	\$568,428.01	0.045	\$25,495.85
41	81	\$62,414.18	\$4,056.92	\$2,702.53	\$6,759.46	\$575,187.47	\$571,807.74	\$46,127.73	\$621,315.20	0.042	\$25,787.00
42	82	\$65,172.89	\$4,236.24	\$2,821.99	\$7,058.22	\$628,373.42	\$624,844.31	\$50,406.19	\$678,779.61	0.038	\$26,068.28
43	83	\$68,053.53	\$4,423.48	\$2,946.72	\$7,370.20	\$686,149.80	\$682,464.71	\$55,054.43	\$741,204.24	0.036	\$26,340.04
44	84	\$71,061.49	\$4,619.00	\$3,076.96	\$7,695.96	\$748,900.21	\$745,052.22	\$60,103.36	\$809,003.56	0.033	\$26,602.58
45	85	\$74,202.41	\$4,823.16	\$3,212.96	\$8,036.12	\$817,039.68	\$813,021.62	\$65,586.45	\$882,626.14	0.030	\$26,856.23
46	86	\$77,482.16	\$5,036.34	\$3,354.98	\$8,391.32	\$891,017.45	\$886,821.79	\$71,539.91	\$962,557.37	0.028	\$27,101.27
47	87	\$80,906.87	\$5,258.95	\$3,503.27	\$8,762.21	\$971,319.58	\$966,938.47	\$78,002.93	\$1,049,322.51	0.026	\$27,338.01
48	88	\$84,482.95	\$5,491.39	\$3,658.11	\$9,149.50	\$1,058,472.01	\$1,053,897.26	\$85,017.89	\$1,143,489.90	0.024	\$27,566.72
49	89	\$88,217.10	\$5,734.11	\$3,819.80	\$9,553.91	\$1,153,043.82	\$1,148,266.86	\$92,630.69	\$1,245,674.50	0.022	\$27,787.67
50	90	\$92,116.30	\$5,987.56	\$3,988.64	\$9,976.20	\$1,255,650.70	\$1,250,662.60	\$100,890.95	\$1,356,541.65	0.021	\$28,001.13
51	91	\$96,187.84	\$6,252.21	\$4,164.93	\$10,417.14	\$1,366,968.79	\$1,361,750.22	\$109,852.39	\$1,476,811.18	0.019	\$28,207.35
52	92	\$100,439.34	\$6,528.56	\$4,349.02	\$10,877.58	\$1,487,688.77	\$1,482,249.98	\$119,573.11	\$1,607,261.87	0.018	\$28,406.57
53	93	\$104,878.76	\$6,817.12	\$4,541.25	\$11,358.37	\$1,618,620.24	\$1,612,941.06	\$130,115.95	\$1,748,736.20	0.016	\$28,599.03
54	94	\$109,514.40	\$7,118.44	\$4,741.97	\$11,860.41	\$1,760,596.60	\$1,754,666.40	\$141,548.94	\$1,902,145.54	0.015	\$28,784.96
55	95	\$114,354.94	\$7,433.07	\$4,951.57	\$12,384.64	\$1,914,530.18	\$1,908,337.86	\$153,945.82	\$2,068,475.80	0.014	\$28,964.57
56	96	\$119,409.42	\$7,761.61	\$5,170.43	\$12,932.04	\$2,081,407.84	\$2,074,941.82	\$167,385.56	\$2,248,793.40	0.013	\$29,138.09
57	97	\$124,687.32	\$8,104.68	\$5,398.96	\$13,503.64	\$2,262,297.03	\$2,255,545.21	\$181,954.83	\$2,444,251.87	0.012	\$29,305.71
58	98	\$130,198.50	\$8,462.90	\$5,637.60	\$14,100.50	\$2,458,352.36	\$2,451,302.11	\$197,746.54	\$2,656,098.90	0.011	\$29,467.65
59	99	\$135,953.27	\$8,836.96	\$5,866.78	\$14,723.74	\$2,670,822.64	\$2,663,460.77	\$214,861.38	\$2,885,684.02	0.010	\$29,624.08
60	100	\$141,962.41	\$9,227.56	\$6,146.97	\$15,374.53	\$2,901,058.55	\$2,893,371.29	\$233,408.26	\$3,134,466.82	0.009	\$29,775.19

Retiree Age at Death (Table 4)	Spouse Age at Retiree Death (Table 5)	Spouse Age at Death (Table 4, using setback)	Value of Retiree's Retirement Pay at Time of Death	Spouse receives 55% Up to Age 62, 35 % Age 62 or Older	Present Value Factor	Present Value	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
77	73	87					
	73		\$52,498.70	\$18,374.55	0.057	\$1,040.22	\$1,040.22
	74		\$54,819.14	\$19,186.70	0.052	\$1,005.09	\$2,045.31
	75		\$57,242.15	\$20,034.75	0.048	\$971.14	\$3,016.45
	76		\$59,772.25	\$20,920.29	0.045	\$938.34	\$3,954.80
	77		\$62,414.19	\$21,844.96	0.042	\$906.65	\$4,861.45
	78		\$65,172.89	\$22,810.51	0.038	\$876.03	\$5,737.48
	79		\$68,053.53	\$23,818.74	0.036	\$846.44	\$6,583.92
	80		\$71,061.50	\$24,871.53	0.033	\$817.85	\$7,401.77
	81		\$74,202.42	\$25,970.85	0.030	\$790.23	\$8,192.00
	82		\$77,482.17	\$27,118.76	0.028	\$763.54	\$8,955.55
	83		\$80,906.88	\$28,317.41	0.026	\$737.75	\$9,693.30
	84		\$84,482.96	\$29,569.04	0.024	\$712.84	\$10,406.14
	85		\$88,217.11	\$30,875.99	0.022	\$688.76	\$11,094.90
	86		\$92,116.30	\$32,240.71	0.021	\$665.50	\$11,760.40

Table 9.2 Present Value of Benefits for E-5

Table 10 below is a summary of the tables from the Appendix. It lists the paygrades E-5 through E-9 and O-4 through O-10, and their respective SBP premium cutoff points in number of years.

Paygrade	Cutoff Point (Years)	Present Value Of Benefits	Present Value Of Payments
E-5	13	\$11,760.40	\$12,301.31
E-6	13	\$15,056.64	\$15,217.24
E-7	13	\$17,189.76	\$17,373.13
E-8	14	\$24,200.27	\$24,203.53
E-9	17	\$37,745.28	\$39,450.24
O-4	13	\$29,122.62	\$30,462.11
O-5	14	\$44,410.24	\$44,416.05
O-6	15	\$66,819.00	\$67,391.25
O-7	18	\$93,683.06	\$97,607.05
O-8	19	\$121,280.73	\$122,621.65
O-9	21	\$152,338.43	\$154,158.31
O-10	21	\$177,737.72	\$179,861.02

Table 10. SBP Premium Cutoff Point (Years)

IV. SUMMARY AND RECOMMENDATIONS

A. SUMMARY

The Survivor Benefit Plan was enacted to enable a surviving beneficiary of a retired military member to continue to receive a portion of the retiree's retirement benefits. It was intended that the cost of the plan would be shared by both the retired member and the government. The retired member was to pay 60 percent of the cost of the plan and the government was to pay the remaining 40 percent.

In setting premiums, DoD actuaries had to make some assumptions concerning future pay raises, COLAs, and interest rates. As it turned out, pay raises, COLAs, etc. turned out to be lower than the actuaries had anticipated. As a result, retirees were paying premiums based on the higher figures that the actuaries anticipated rather than on actual figures. This resulted in the retirees paying a share of the costs that exceeded the intended 60 percent.

The Retired Officers Association has taken an active role in trying to correct this discrepancy through continued lobbying of Congress. Although some improvements have been made, it appears that retirees are still paying a share of costs that is greater than the originally intended 60 percent share. TROA continues to strive to regain the original 60/40 percent ratio of the cost of the SBP.

As part of their efforts, TROA was successful in 1998 in getting Congress to pass into law a 30-year/age 70 cutoff point for premium payments made by retirees. Although this was a milestone in helping to move toward regaining the 60/40 percent cost share ratio,

the computations made in the previous chapter indicate that 30 years may be too long for retirees to pay SBP premiums. The computations indicate that based on the values of payments and benefits, the number of years of payments required to achieve the original ratio varies from 13 to 21 years depending on paygrade.

The number of years that payments must be made increases as higher paygrades are reached. The reason is that those at the higher paygrades are older and there is a shorter duration between the time of their retirement and the time of their death than there is for a retiree in a lower paygrade. Thus the surviving spouse of a higher paygrade retiree will start receiving survivor benefits sooner compared to the spouse of a younger retiree in a lower paygrade. Therefore the value of benefits to their survivor, in present terms, is greater.

For example, the data on a member in the E-5 paygrade shows that the time between retirement and death is 37 years. For a member in the O-10 paygrade the length of time between death and retirement is 24 years. Thus the present value of benefits payable to the spouse of an E-5 is projected forward 37 years, whereas the present value of benefits payable to the spouse of an O-10 is projected forward only 24 years. Therefore, the present value factors for the spouse of an O-10 are higher and so are the subsequent dollar values of benefits. In order for the retiree's payments to equal these higher benefits, the retiree in the higher paygrades must pay premiums longer.

Regardless of the difference in the number of years of payments for the aforementioned ranks, the results of this thesis show that the original 60/40 percent cost share of the SBP can be reached for all of the ranks in a period substantially lower than 30 years.

In 1999, Congress was also considering legislation to eliminate or reduce the offset in survivor benefits that takes effect when survivors reach the age of 62. As mentioned earlier, a surviving spouse will receive 55 percent of the deceased retiree's retirement pay until she reaches the age of 62; upon reaching the age of 62, benefits are reduced to 35 percent of the amount of retirement pay. In all of the computations conducted in the previous chapter, the age of the surviving spouse for all the ranks considered was 62 or older. The computations therefore were based on the survivor receiving benefits at the rate of 35 percent. If legislation passes that eliminates or reduces the offset, benefits for the survivor will be greater and thus the number of years of payments made by the retiree will also have to increase.

It would not be difficult to calculate the number of years of payments required by the retiree for this purpose. The aggregate present value of all benefits to the survivor would have to be recomputed at the rate of 55 percent if the offset is totally eliminated or at a rate between 40 and 50 percent if the offset is partially reduced. As in chapter three, this number would then be compared to the aggregate present value of payments in the present value of payments tables to find the appropriate cutoff point.

B. RECOMMENDATIONS

It must be recognized that when a member dies on active duty, their survivors will receive benefits that did not cost the active duty member anything. The cost of these benefits must be factored into the overall cost of the SBP. They will more than likely have

to be subsidized by the retired service members through higher or longer premium payments.

One way to provide some of the subsidization is to have all retirees pay premiums for the same fixed number of years. The highest number of years determined by this thesis to achieve the 60/40 split was 21 years for the O-9 and O-10 ranks. By having all members pay premiums for 21 years, the subsidization will come from members who have served for a lesser number of years. This will also provide satisfaction to retirees' primary lobbying group, TROA, which seeks to protect longer serving members from any real or perceived cost disadvantages in supporting the SBP.

Computations can be made based on the spreadsheet information in this thesis to determine the financial effect of covering the costs of deceased active duty members by the subsidization mentioned above.

Additionally, this thesis only computes cutoff points for providing benefits to current spouses of retired members. The same type of computations can be conducted to determine cutoff points for retirees that choose spouse and children coverage, children-only coverage, insurable interest coverage, and former spouse coverage.

APPENDIX

Average Retirement Age/Number of Years of Service	Age at End of Year	Yearly Retired Pay	Retiree Cost (6.5% x column 4)	Govt. Cost (4.33% x column 4)	Each Year's Total Contribution	Aggregate Contribution	Average Aggregate Contribution	Return Based on Rate of Return (Table 8)	End of Year Aggregate Value of Contributions	Present Value Factor	Aggregate Present Value
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age 41											
21 Years								8.067%			
1	42	\$13,687.38	\$889.68	\$592.66	\$1,482.34	\$1,482.34	\$741.17	\$59.79	\$1,542.13	0.925	\$1,426.98
2	43	\$14,292.36	\$929.00	\$618.86	\$1,547.86	\$3,090.00	\$2,316.06	\$186.84	\$3,276.83	0.856	\$2,805.72
3	44	\$14,924.08	\$970.07	\$646.21	\$1,616.28	\$4,893.11	\$4,084.97	\$329.53	\$5,222.65	0.792	\$4,137.85
4	45	\$15,583.73	\$1,012.94	\$674.78	\$1,687.72	\$6,910.36	\$6,066.51	\$489.38	\$7,399.75	0.733	\$5,424.96
5	46	\$16,272.53	\$1,057.71	\$704.60	\$1,762.31	\$9,162.06	\$8,280.91	\$668.02	\$9,830.09	0.678	\$6,668.55
6	47	\$16,991.78	\$1,104.47	\$735.74	\$1,840.21	\$11,670.29	\$10,750.19	\$867.22	\$12,537.51	0.628	\$7,870.10
7	48	\$17,742.81	\$1,153.28	\$768.26	\$1,921.55	\$14,459.06	\$13,498.29	\$1,088.91	\$15,547.97	0.581	\$9,031.03
8	49	\$18,527.04	\$1,204.26	\$802.22	\$2,006.48	\$17,554.44	\$16,551.20	\$1,335.19	\$18,889.63	0.537	\$10,152.72
9	50	\$19,345.94	\$1,257.49	\$837.68	\$2,095.17	\$20,984.80	\$19,937.21	\$1,608.33	\$22,593.13	0.497	\$11,236.47
10	51	\$20,201.03	\$1,313.07	\$874.70	\$2,187.77	\$24,780.90	\$23,687.02	\$1,910.83	\$26,691.73	0.460	\$12,283.59
11	52	\$21,093.92	\$1,371.10	\$913.37	\$2,284.47	\$28,976.20	\$27,833.97	\$2,245.37	\$31,221.57	0.426	\$13,295.30
12	53	\$22,026.27	\$1,431.71	\$953.74	\$2,385.44	\$33,607.02	\$32,414.29	\$2,614.86	\$36,221.88	0.394	\$14,272.80
13	54	\$22,999.83	\$1,494.99	\$995.89	\$2,490.88	\$38,712.76	\$37,467.32	\$3,022.49	\$41,735.25	0.365	\$15,217.74
14	55	\$24,016.42	\$1,561.07	\$1,039.91	\$2,600.98	\$44,336.22	\$43,035.74	\$3,471.69	\$47,807.92	0.337	\$16,129.75
15	56	\$25,077.95	\$1,630.07	\$1,085.88	\$2,715.94	\$50,523.86	\$49,165.89	\$3,966.21	\$54,490.07	0.312	\$17,011.40
16	57	\$26,186.39	\$1,702.12	\$1,133.87	\$2,835.99	\$57,326.06	\$55,908.06	\$4,510.10	\$61,836.16	0.289	\$17,863.23
17	58	\$27,343.83	\$1,777.35	\$1,183.99	\$2,961.34	\$64,797.50	\$63,316.83	\$5,107.77	\$69,905.27	0.267	\$18,686.26
18	59	\$28,552.43	\$1,855.91	\$1,236.32	\$3,092.23	\$72,997.49	\$71,451.38	\$5,763.98	\$78,761.48	0.247	\$19,481.44
19	60	\$29,814.44	\$1,937.94	\$1,290.97	\$3,228.90	\$81,990.38	\$80,375.93	\$6,483.93	\$88,474.31	0.229	\$20,249.73
20	61	\$31,132.24	\$2,023.60	\$1,348.03	\$3,371.62	\$91,845.93	\$90,160.12	\$7,273.22	\$99,119.15	0.212	\$20,992.03
21	62	\$32,508.29	\$2,113.04	\$1,407.61	\$3,520.65	\$102,639.79	\$100,879.47	\$8,137.95	\$110,777.74	0.196	\$21,709.23
22	63	\$33,945.15	\$2,206.44	\$1,469.83	\$3,676.26	\$114,454.00	\$112,615.87	\$9,084.72	\$123,538.72	0.181	\$22,402.15
23	64	\$35,445.53	\$2,303.96	\$1,534.79	\$3,838.75	\$127,377.47	\$125,458.10	\$10,120.70	\$137,498.18	0.168	\$23,071.64
24	65	\$37,012.22	\$2,405.79	\$1,602.63	\$4,008.42	\$141,506.60	\$139,502.39	\$11,253.66	\$152,760.26	0.155	\$23,718.47
25	66	\$38,648.16	\$2,512.13	\$1,673.47	\$4,185.60	\$156,945.86	\$154,853.06	\$12,492.00	\$169,437.85	0.144	\$24,343.42
26	67	\$40,356.41	\$2,623.17	\$1,747.43	\$4,370.60	\$173,808.45	\$171,623.15	\$13,844.84	\$187,653.29	0.133	\$24,947.23
27	68	\$42,140.17	\$2,739.11	\$1,824.67	\$4,563.78	\$192,217.07	\$189,935.18	\$15,322.07	\$207,539.14	0.123	\$25,530.59
28	69	\$44,002.76	\$2,860.18	\$1,905.32	\$4,765.50	\$212,304.64	\$209,921.89	\$16,934.40	\$229,239.04	0.114	\$26,094.22
29	70	\$45,947.68	\$2,986.60	\$1,989.53	\$4,976.13	\$234,215.18	\$231,727.11	\$18,693.43	\$252,908.60	0.105	\$26,638.77
30	71	\$47,978.57	\$3,118.61	\$2,077.47	\$5,196.08	\$258,104.68	\$255,506.64	\$20,611.72	\$278,716.40	0.097	\$27,164.89
31	72	\$50,099.22	\$3,256.45	\$2,169.30	\$5,425.75	\$284,142.15	\$281,429.28	\$22,702.90	\$306,845.05	0.090	\$27,673.20
32	73	\$52,313.61	\$3,400.38	\$2,265.18	\$5,665.56	\$312,510.61	\$309,677.83	\$24,981.71	\$337,492.32	0.083	\$28,164.31
33	74	\$54,625.87	\$3,550.68	\$2,365.30	\$5,915.98	\$343,408.30	\$340,450.31	\$27,464.13	\$370,872.43	0.077	\$28,638.78
34	75	\$57,040.33	\$3,707.62	\$2,469.85	\$6,177.47	\$377,049.90	\$373,961.16	\$30,167.45	\$407,217.35	0.071	\$29,097.19
35	76	\$59,561.52	\$3,871.50	\$2,579.01	\$6,450.51	\$413,667.86	\$410,442.60	\$33,110.40	\$446,778.26	0.066	\$29,540.08
36	77	\$62,194.14	\$4,042.62	\$2,693.01	\$6,735.62	\$453,513.89	\$450,146.08	\$36,313.28	\$489,827.17	0.061	\$29,967.98

Table 9.3 Present Value of Payments for E-6

Retiree Age at Death (Table 4)	Spouse Age at Retiree Death (Table 5)	Spouse Age at Death (Table 4, using setback	Value of Retiree's Retirement Pay at Time of Death	Spouse receives 55% Up to Age 62, 35 % Age 62 or Older	Present Value Factor	Present Value	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
77	73	87					
	73		\$62,194.14	\$21,767.95	0.061	\$1,331.78	\$1,331.78
	74		\$64,943.12	\$22,730.09	0.057	\$1,286.80	\$2,618.58
	75		\$67,813.61	\$23,734.76	0.052	\$1,243.34	\$3,861.92
	76		\$70,810.97	\$24,783.84	0.048	\$1,201.34	\$5,063.26
	77		\$73,940.81	\$25,879.28	0.045	\$1,160.77	\$6,224.03
	78		\$77,209.00	\$27,023.15	0.042	\$1,121.57	\$7,345.60
	79		\$80,621.63	\$28,217.57	0.038	\$1,083.69	\$8,429.28
	80		\$84,185.11	\$29,464.79	0.036	\$1,047.08	\$9,476.37
	81		\$87,906.09	\$30,767.13	0.033	\$1,011.72	\$10,488.09
	82		\$91,791.54	\$32,127.04	0.030	\$977.55	\$11,465.64
	83		\$95,848.73	\$33,547.05	0.028	\$944.53	\$12,410.17
	84		\$100,085.24	\$35,029.83	0.026	\$912.63	\$13,322.80
	85		\$104,509.01	\$36,578.15	0.024	\$881.81	\$14,204.61
	86		\$109,128.31	\$38,194.91	0.022	\$852.03	\$15,056.64

Table 9.4 Present Value of Benefits for E-6

Average Retirement Age/Number of Years Service	End of Year	Age at End of Year	Yearly Retired Pay	Retiree Cost (6.5% x column 4)	Govt. Cost (4.33% x column 4)	Each Year's Total Contribution	Aggregate Contribution	Average Aggregate Contribution	Return Based on Rate of Return (Table 8)	End of Year Aggregate Value of Contributions	Present Value Factor	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age 41												
21 Years									8.067%			
1	42		\$15,626.52	\$1,015.72	\$676.63	\$1,692.35	\$1,692.35	\$846.18	\$68.26	\$1,760.61	0.925	\$1,629.14
2	43		\$16,317.21	\$1,060.62	\$706.54	\$1,767.15	\$3,527.77	\$2,644.19	\$213.31	\$3,741.07	0.856	\$3,203.21
3	44		\$17,038.43	\$1,107.50	\$737.76	\$1,845.26	\$5,586.34	\$4,663.71	\$376.22	\$5,962.56	0.792	\$4,724.08
4	45		\$17,791.53	\$1,156.45	\$770.37	\$1,926.82	\$7,889.38	\$6,925.97	\$558.72	\$8,448.10	0.733	\$6,193.53
5	46		\$18,577.92	\$1,207.56	\$804.42	\$2,011.99	\$10,460.09	\$9,454.09	\$762.66	\$11,222.75	0.678	\$7,613.31
6	47		\$19,399.06	\$1,260.94	\$839.98	\$2,100.92	\$13,323.67	\$12,273.21	\$990.08	\$14,313.75	0.628	\$8,985.09
7	48		\$20,256.50	\$1,316.67	\$877.11	\$2,193.78	\$16,507.53	\$15,410.64	\$1,243.18	\$17,750.70	0.581	\$10,310.49
8	49		\$21,151.84	\$1,374.87	\$915.87	\$2,290.74	\$20,041.45	\$18,896.07	\$1,524.35	\$21,565.79	0.537	\$11,591.09
9	50		\$22,086.75	\$1,435.64	\$956.36	\$2,391.99	\$23,957.79	\$22,761.79	\$1,836.19	\$25,793.98	0.497	\$12,828.39
10	51		\$23,062.98	\$1,499.09	\$998.63	\$2,497.72	\$28,291.70	\$27,042.84	\$2,181.55	\$30,473.25	0.460	\$14,023.85
11	52		\$24,082.37	\$1,565.35	\$1,042.77	\$2,608.12	\$33,081.37	\$31,777.31	\$2,563.48	\$35,644.84	0.426	\$15,178.89
12	53		\$25,146.81	\$1,634.54	\$1,088.86	\$2,723.40	\$38,368.24	\$37,006.54	\$3,450.70	\$41,353.56	0.394	\$16,294.88
13	54		\$26,258.30	\$1,706.79	\$1,136.98	\$2,843.77	\$44,197.33	\$42,775.45	\$3,963.54	\$47,648.03	0.365	\$17,373.33
14	55		\$27,418.91	\$1,782.23	\$1,187.24	\$2,969.47	\$50,617.50	\$49,132.76	\$4,528.12	\$54,581.04	0.337	\$18,414.91
15	56		\$28,630.83	\$1,861.00	\$1,239.71	\$3,100.72	\$57,681.75	\$56,131.40	\$5,149.07	\$62,209.87	0.312	\$19,421.47
16	57		\$29,896.31	\$1,943.26	\$1,294.51	\$3,237.77	\$65,447.65	\$63,828.76	\$5,831.40	\$70,596.71	0.289	\$20,393.98
17	58		\$31,217.73	\$2,029.15	\$1,351.73	\$3,380.88	\$73,977.59	\$72,287.15	\$6,580.59	\$79,809.00	0.267	\$21,333.61
18	59		\$32,597.55	\$2,118.84	\$1,411.47	\$3,530.31	\$83,339.31	\$81,574.15	\$7,402.53	\$89,919.90	0.247	\$22,241.45
19	60		\$34,038.36	\$2,212.49	\$1,473.86	\$3,686.35	\$93,606.25	\$91,763.07	\$8,303.64	\$101,008.78	0.229	\$23,118.58
20	61		\$35,542.86	\$2,310.29	\$1,539.01	\$3,849.29	\$104,858.07	\$102,933.43	\$9,290.88	\$113,161.71	0.212	\$23,966.05
21	62		\$37,113.85	\$2,412.40	\$1,607.03	\$4,019.43	\$117,181.14	\$115,171.43	\$10,371.79	\$126,472.02	0.196	\$24,784.85
22	63		\$38,754.29	\$2,519.03	\$1,678.06	\$4,197.09	\$130,689.11	\$128,570.56	\$11,554.54	\$141,040.90	0.181	\$25,575.95
23	64		\$40,467.23	\$2,630.37	\$1,752.23	\$4,382.60	\$145,423.50	\$143,232.20	\$12,848.00	\$156,978.04	0.168	\$26,340.28
24	65		\$42,255.88	\$2,746.63	\$1,829.68	\$4,576.31	\$161,554.35	\$159,266.19	\$14,261.78	\$174,402.35	0.155	\$27,078.76
25	66		\$44,123.59	\$2,868.03	\$1,910.55	\$4,778.58	\$179,180.94	\$176,791.65	\$15,806.29	\$193,442.72	0.144	\$27,792.24
26	67		\$46,073.85	\$2,994.80	\$1,995.00	\$4,989.80	\$198,432.52	\$195,937.62	\$17,492.80	\$214,238.81	0.133	\$28,481.59
27	68		\$48,110.31	\$3,127.17	\$2,083.18	\$5,210.35	\$219,449.15	\$216,843.98	\$19,333.56	\$236,941.96	0.123	\$29,147.61
28	69		\$50,236.79	\$3,265.39	\$2,175.25	\$5,440.64	\$242,382.60	\$239,662.28	\$21,341.79	\$261,716.16	0.114	\$29,791.08
29	70		\$52,457.25	\$3,409.72	\$2,271.40	\$5,681.12	\$267,397.28	\$264,556.72	\$23,531.86	\$288,739.07	0.105	\$30,412.78
30	71		\$54,775.87	\$3,560.43	\$2,371.79	\$5,932.23	\$294,671.29	\$291,705.18	\$25,919.30	\$318,203.15	0.097	\$31,013.44
31	72		\$57,196.96	\$3,717.80	\$2,476.63	\$6,194.43	\$324,397.58	\$321,300.37	\$28,520.96	\$350,316.88	0.090	\$31,593.76
32	73		\$59,725.06	\$3,882.13	\$2,586.10	\$6,468.22	\$356,785.11	\$353,550.99	\$31,355.07	\$385,306.06	0.083	\$32,154.44
33	74		\$62,364.91	\$4,053.72	\$2,700.40	\$6,754.12	\$392,060.18	\$388,683.12	\$34,441.38	\$423,415.25	0.077	\$32,696.14
34	75		\$65,121.44	\$4,232.89	\$2,819.76	\$7,052.65	\$430,467.90	\$426,941.58	\$37,801.27	\$464,909.28	0.071	\$33,219.50
35	76		\$67,999.81	\$4,419.99	\$2,944.39	\$7,364.38	\$472,273.66	\$468,591.47	\$41,457.92	\$510,074.93	0.066	\$33,725.13
36	77		\$71,005.40	\$4,615.35	\$3,074.53	\$7,689.88	\$517,764.82	\$513,919.88	\$45,919.88	\$559,222.74	0.061	\$34,213.65

Table 9.5 Present Value of Payments for E-7

37	78	\$74,143.84	\$4,819.35	\$3,210.43	\$8,029.78	\$567,252.51	\$563,237.62	\$45,436.38	\$612,588.89	0.057	\$34,685.62
38	79	\$77,471.00	\$5,032.36	\$3,352.33	\$8,384.69	\$621,073.59	\$616,881.24	\$49,763.81	\$670,837.40	0.052	\$35,141.60
39	80	\$80,843.01	\$5,254.80	\$3,500.50	\$8,755.30	\$679,592.69	\$675,215.05	\$54,469.60	\$734,062.29	0.048	\$35,582.14
40	81	\$84,416.27	\$5,487.06	\$3,655.22	\$9,142.28	\$743,204.57	\$738,633.43	\$59,585.56	\$802,790.13	0.045	\$36,007.75
41	82	\$88,147.47	\$5,729.59	\$3,816.79	\$9,546.37	\$812,336.50	\$807,563.32	\$65,146.13	\$877,482.64	0.042	\$36,418.94
42	83	\$92,043.58	\$5,982.83	\$3,985.49	\$9,968.32	\$887,450.96	\$882,466.80	\$71,188.60	\$958,639.55	0.038	\$36,816.20
43	84	\$96,111.91	\$6,247.27	\$4,161.65	\$10,408.92	\$969,048.47	\$963,844.01	\$77,753.30	\$1,046,801.77	0.036	\$37,200.00
44	85	\$100,360.06	\$6,523.40	\$4,345.59	\$10,868.99	\$1,057,670.76	\$1,052,236.27	\$84,883.90	\$1,142,554.66	0.033	\$37,570.79
45	86	\$104,795.97	\$6,811.74	\$4,537.67	\$11,349.40	\$1,153,904.07	\$1,148,229.36	\$92,627.66	\$1,246,531.73	0.030	\$37,929.01
46	87	\$109,427.95	\$7,112.82	\$4,738.23	\$11,851.05	\$1,258,382.78	\$1,252,457.25	\$101,035.73	\$1,359,418.50	0.028	\$38,275.09
47	88	\$114,264.67	\$7,427.20	\$4,947.66	\$12,374.86	\$1,371,793.37	\$1,365,605.93	\$110,163.43	\$1,481,956.80	0.026	\$38,609.43
48	89	\$119,315.17	\$7,755.49	\$5,166.35	\$12,921.83	\$1,494,878.63	\$1,488,417.71	\$120,070.66	\$1,614,949.29	0.024	\$38,932.44
49	90	\$124,588.90	\$8,098.28	\$5,394.70	\$13,492.98	\$1,628,442.26	\$1,621,695.77	\$130,822.20	\$1,759,264.46	0.022	\$39,244.49
50	91	\$130,095.73	\$8,456.22	\$5,633.14	\$14,089.37	\$1,773,353.83	\$1,766,309.14	\$142,488.16	\$1,915,841.99	0.021	\$39,545.96
51	92	\$135,845.96	\$8,829.99	\$5,882.13	\$14,712.12	\$1,930,554.10	\$1,923,198.05	\$155,144.39	\$2,085,698.49	0.019	\$39,837.20
52	93	\$141,850.35	\$9,220.27	\$6,142.12	\$15,362.39	\$2,101,060.88	\$2,093,379.69	\$168,872.94	\$2,269,933.82	0.018	\$40,118.56
53	94	\$148,120.13	\$9,627.81	\$6,413.60	\$16,041.41	\$2,285,975.23	\$2,277,954.53	\$183,762.59	\$2,469,737.82	0.016	\$40,390.37
54	95	\$154,667.04	\$10,053.36	\$6,697.08	\$16,750.44	\$2,486,488.27	\$2,478,113.04	\$199,909.38	\$2,686,397.64	0.015	\$40,652.95
55	96	\$161,503.33	\$10,497.72	\$6,993.09	\$17,490.81	\$2,703,888.45	\$2,695,143.05	\$217,417.19	\$2,921,305.64	0.014	\$40,906.63
56	97	\$168,641.77	\$10,961.72	\$7,302.19	\$18,263.90	\$2,939,569.55	\$2,930,437.60	\$236,398.40	\$3,175,967.95	0.013	\$41,151.69
57	98	\$176,095.74	\$11,446.22	\$7,624.95	\$19,071.17	\$3,195,039.12	\$3,185,503.53	\$256,974.57	\$3,452,013.69	0.012	\$41,388.42
58	99	\$183,879.17	\$11,952.15	\$7,961.97	\$19,914.11	\$3,471,927.80	\$3,461,970.75	\$279,277.18	\$3,751,204.98	0.011	\$41,617.12
59	100	\$192,006.63	\$12,480.43	\$8,313.89	\$20,794.32	\$3,771,999.30	\$3,761,602.14	\$303,448.44	\$4,075,447.75	0.010	\$41,838.05
60	101	\$200,493.32	\$13,032.07	\$8,681.36	\$21,713.43	\$4,097,161.17	\$4,086,304.46	\$329,642.18	\$4,426,803.35	0.009	\$42,051.47

Table 9.5 Present Value of Payments for E-7

Retiree Age at Death (Table 4)	Spouse Age at Retiree Death (Table 5)	Spouse Age at Death (Table 4, using setback)	Value of Retiree's Retirement Pay at Time of Death	Spouse receives 55% Up to Age 62, 35 % Age 62 or Older	Present Value Factor	Present Value	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
77	73	87					
	73		\$71,005.40	\$24,851.89	0.061	\$1,520.46	\$1,520.46
	74		\$74,143.84	\$25,950.34	0.057	\$1,469.10	\$2,989.56
	75		\$77,421.00	\$27,097.35	0.052	\$1,419.49	\$4,409.05
	76		\$80,843.00	\$28,295.05	0.048	\$1,371.54	\$5,780.59
	77		\$84,416.27	\$29,545.69	0.045	\$1,325.22	\$7,105.81
	78		\$88,147.46	\$30,851.61	0.042	\$1,280.46	\$8,386.27
	79		\$92,043.58	\$32,215.25	0.038	\$1,237.22	\$9,623.49
	80		\$96,111.91	\$33,639.17	0.036	\$1,195.43	\$10,818.92
	81		\$100,360.05	\$35,126.02	0.033	\$1,155.05	\$11,973.97
	82		\$104,795.97	\$36,678.59	0.030	\$1,116.04	\$13,090.01
	83		\$109,427.95	\$38,299.78	0.028	\$1,078.35	\$14,168.36
	84		\$114,264.67	\$39,992.63	0.026	\$1,041.93	\$15,210.29
	85		\$119,315.16	\$41,760.31	0.024	\$1,006.74	\$16,217.03
	86		\$124,588.89	\$43,606.11	0.022	\$972.74	\$17,189.76

Table 9.6 Present Value of Benefits for E-7

Average Retirement Age/Number of Years Service	End of Year	Age at End of Year	Yearly Retired Pay	Retiree Cost (6.5% x column 4)	Govt. Cost (4.33% x column 4)	Each Year's Total Contribution	Aggregate Contribution	Average Aggregate Contribution	Return Based on Rate of Return (Table 8)	End of Year Aggregate Value of Contributions	Present Value Factor	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age 43												
23 Years									8.067%			
1	44		\$20,538.54	\$1,335.01	\$889.32	\$2,224.32	\$2,224.32	\$1,112.16	\$89.72	\$2,314.04	0.925	\$2,141.24
2	45		\$21,446.34	\$1,394.01	\$928.63	\$2,322.64	\$4,636.68	\$3,475.36	\$280.36	\$4,917.04	0.856	\$4,210.11
3	46		\$22,394.27	\$1,455.63	\$969.67	\$2,425.30	\$7,342.34	\$6,129.69	\$494.48	\$7,836.82	0.792	\$6,209.04
4	47		\$23,384.10	\$1,519.97	\$1,012.53	\$2,532.50	\$10,369.32	\$9,103.07	\$734.34	\$11,103.66	0.733	\$8,140.40
5	48		\$24,417.68	\$1,587.15	\$1,057.29	\$2,644.43	\$13,748.10	\$12,425.88	\$1,002.40	\$14,750.49	0.678	\$10,006.47
6	49		\$25,496.94	\$1,657.30	\$1,104.02	\$2,761.32	\$17,511.81	\$16,131.15	\$1,301.30	\$18,813.11	0.628	\$11,809.45
7	50		\$26,623.90	\$1,730.55	\$1,152.81	\$2,883.37	\$21,696.48	\$20,254.80	\$1,633.95	\$23,330.43	0.581	\$13,551.48
8	51		\$27,800.68	\$1,807.04	\$1,203.77	\$3,010.81	\$26,341.25	\$24,835.84	\$2,003.51	\$28,344.75	0.537	\$15,234.82
9	52		\$29,029.47	\$1,886.92	\$1,256.98	\$3,143.89	\$31,488.65	\$29,916.70	\$2,413.38	\$33,902.03	0.497	\$16,860.84
10	53		\$30,312.57	\$1,970.32	\$1,312.53	\$3,282.85	\$37,184.88	\$35,543.45	\$2,867.29	\$40,052.17	0.460	\$18,432.09
11	54		\$31,652.39	\$2,057.41	\$1,370.55	\$3,427.95	\$43,480.12	\$41,766.14	\$3,369.27	\$46,849.40	0.426	\$19,950.20
12	55		\$33,051.42	\$2,148.34	\$1,431.13	\$3,579.47	\$50,428.86	\$48,639.13	\$3,923.72	\$54,352.58	0.394	\$21,416.99
13	56		\$34,512.29	\$2,243.30	\$1,494.38	\$3,737.68	\$58,090.26	\$56,221.42	\$4,535.38	\$62,825.65	0.365	\$22,834.17
14	57		\$36,037.74	\$2,342.45	\$1,560.43	\$3,902.89	\$66,528.53	\$64,577.09	\$5,209.43	\$71,737.97	0.337	\$24,203.33
15	58		\$37,630.61	\$2,445.99	\$1,629.41	\$4,075.39	\$75,813.36	\$73,775.67	\$5,951.48	\$81,764.85	0.312	\$25,526.39
16	59		\$39,293.88	\$2,554.10	\$1,701.42	\$4,255.53	\$86,020.37	\$83,892.61	\$6,767.62	\$92,787.99	0.289	\$26,804.60
17	60		\$41,030.67	\$2,666.99	\$1,776.63	\$4,443.62	\$97,231.61	\$95,009.80	\$7,664.44	\$104,896.05	0.267	\$28,039.58
18	61		\$42,844.22	\$2,784.87	\$1,855.15	\$4,640.03	\$109,536.08	\$107,216.07	\$8,649.12	\$118,185.20	0.247	\$29,232.80
19	62		\$44,737.94	\$2,907.97	\$1,937.15	\$4,845.12	\$123,030.32	\$120,607.76	\$9,729.43	\$132,759.75	0.229	\$30,385.65
20	63		\$46,715.36	\$3,036.50	\$2,022.77	\$5,059.27	\$137,819.02	\$135,289.38	\$10,913.79	\$148,732.82	0.212	\$31,499.51
21	64		\$48,780.17	\$3,170.71	\$2,112.18	\$5,282.89	\$154,015.71	\$151,374.26	\$12,211.36	\$166,227.07	0.196	\$32,575.69
22	65		\$50,936.26	\$3,310.86	\$2,205.54	\$5,516.40	\$171,743.47	\$168,985.27	\$13,632.04	\$185,375.51	0.181	\$33,615.46
23	66		\$53,187.64	\$3,457.20	\$2,303.02	\$5,760.22	\$191,135.73	\$188,255.62	\$15,186.58	\$206,322.31	0.168	\$34,620.05
24	67		\$55,538.53	\$3,610.00	\$2,404.82	\$6,014.82	\$212,337.13	\$209,329.72	\$16,886.63	\$229,223.76	0.155	\$35,590.66
25	68		\$57,993.34	\$3,769.57	\$2,511.11	\$6,280.68	\$235,504.44	\$232,384.10	\$18,744.81	\$254,249.25	0.144	\$36,528.42
26	69		\$60,556.64	\$3,936.18	\$2,622.10	\$6,558.28	\$260,807.54	\$257,528.40	\$20,774.82	\$281,582.35	0.133	\$37,434.45
27	70		\$63,233.25	\$4,110.16	\$2,738.00	\$6,848.16	\$288,430.51	\$285,006.43	\$22,991.47	\$311,421.98	0.123	\$38,309.83
28	71		\$66,028.16	\$4,291.83	\$2,859.02	\$7,150.85	\$318,572.83	\$314,997.41	\$25,410.84	\$343,983.67	0.114	\$39,155.57
29	72		\$68,946.60	\$4,481.53	\$2,985.39	\$7,466.92	\$351,450.59	\$347,717.13	\$28,050.34	\$379,500.93	0.105	\$39,972.70
30	73		\$71,994.04	\$4,679.61	\$3,117.34	\$7,796.95	\$387,297.88	\$383,399.41	\$30,928.83	\$418,226.72	0.097	\$40,762.16
31	74		\$75,176.18	\$4,886.45	\$3,255.13	\$8,141.58	\$426,368.30	\$422,297.51	\$34,066.74	\$460,435.03	0.090	\$41,524.91
32	75		\$78,498.96	\$5,102.43	\$3,399.01	\$8,501.44	\$468,936.47	\$464,685.75	\$37,486.20	\$506,422.67	0.083	\$42,261.83
33	76		\$81,968.62	\$5,327.96	\$3,549.24	\$8,877.20	\$515,299.87	\$510,861.27	\$41,211.18	\$556,511.05	0.077	\$42,973.80
34	77		\$85,591.63	\$5,563.46	\$3,706.12	\$9,269.57	\$565,780.63	\$561,145.84	\$45,267.63	\$611,048.26	0.071	\$43,661.67
35	78		\$89,374.78	\$5,809.36	\$3,869.93	\$9,679.29	\$620,727.55	\$615,887.91	\$49,683.68	\$670,411.23	0.066	\$44,326.25
36	79		\$93,325.15	\$6,066.13	\$4,040.98	\$10,107.11	\$680,518.34	\$675,464.78	\$54,489.74	\$735,008.08	0.061	\$44,968.32

Table 9.7 Present Value of Payments for E-8

37	80	\$97,450.12	\$6,334.26	\$4,219.59	\$10,553.85	\$745,561.93	\$740,285.01	\$59,718.79	\$805,280.72	0.057	\$45,588.65
38	81	\$101,757.41	\$6,614.23	\$4,406.10	\$11,020.33	\$816,301.05	\$810,790.89	\$85,405.50	\$881,707.55	0.052	\$46,187.96
39	82	\$106,255.09	\$6,906.58	\$4,600.85	\$11,507.43	\$893,214.98	\$887,461.27	\$71,591.50	\$964,806.48	0.048	\$46,766.98
40	83	\$110,951.57	\$7,211.85	\$4,804.20	\$12,016.05	\$976,822.53	\$970,814.51	\$78,315.61	\$1,055,138.14	0.045	\$47,326.38
41	84	\$115,855.62	\$7,530.62	\$5,016.55	\$12,547.16	\$1,067,685.30	\$1,061,411.72	\$85,624.08	\$1,153,309.39	0.042	\$47,866.82
42	85	\$120,976.44	\$7,863.47	\$5,238.28	\$13,101.75	\$1,166,411.14	\$1,159,860.26	\$93,565.93	\$1,259,977.06	0.038	\$48,388.96
43	86	\$126,323.60	\$8,211.03	\$5,469.81	\$13,680.85	\$1,273,657.91	\$1,266,817.49	\$102,194.17	\$1,375,852.08	0.036	\$48,893.40
44	87	\$131,907.11	\$8,573.96	\$5,711.58	\$14,285.54	\$1,390,137.62	\$1,382,994.85	\$111,566.19	\$1,501,703.81	0.033	\$49,380.74
45	88	\$137,737.40	\$8,952.93	\$5,964.03	\$14,916.96	\$1,516,620.77	\$1,509,162.29	\$121,744.12	\$1,638,364.89	0.030	\$49,851.57
46	89	\$143,825.39	\$9,348.65	\$6,227.64	\$15,576.29	\$1,653,941.18	\$1,646,153.04	\$132,795.17	\$1,786,736.35	0.028	\$50,306.43
47	90	\$150,182.47	\$9,761.86	\$6,502.90	\$16,264.76	\$1,800,001.11	\$1,794,868.73	\$144,792.06	\$1,947,793.17	0.026	\$50,745.87
48	91	\$156,820.54	\$10,193.34	\$6,790.33	\$16,983.68	\$1,964,776.84	\$1,956,285.00	\$157,813.51	\$2,122,590.35	0.024	\$51,170.41
49	92	\$163,752.01	\$10,643.88	\$7,090.46	\$17,734.34	\$2,140,324.69	\$2,131,457.52	\$171,944.68	\$2,312,269.37	0.022	\$51,580.55
50	93	\$170,989.85	\$11,114.34	\$7,403.86	\$18,518.20	\$2,330,787.57	\$2,321,528.47	\$187,277.70	\$2,518,065.27	0.021	\$51,976.78
51	94	\$178,547.60	\$11,605.59	\$7,731.11	\$19,336.70	\$2,537,401.97	\$2,527,733.62	\$203,912.27	\$2,741,314.24	0.019	\$52,359.57
52	95	\$186,439.40	\$12,118.56	\$8,072.83	\$20,191.39	\$2,761,505.63	\$2,751,409.94	\$221,956.24	\$2,983,461.87	0.018	\$52,729.37
53	96	\$194,680.02	\$12,654.20	\$8,429.65	\$21,083.85	\$3,004,545.72	\$2,994,003.79	\$241,526.29	\$3,246,072.00	0.016	\$53,086.63
54	97	\$203,284.88	\$13,213.52	\$8,802.24	\$22,015.75	\$3,268,087.76	\$3,257,079.88	\$262,748.63	\$3,530,836.39	0.015	\$53,431.75
55	98	\$212,270.07	\$13,797.55	\$9,191.29	\$22,988.85	\$3,553,825.24	\$3,542,330.82	\$285,759.83	\$3,839,587.57	0.014	\$53,765.16
56	99	\$221,652.41	\$14,407.41	\$9,597.55	\$24,004.96	\$3,851,587.54	\$3,851,587.54	\$310,707.57	\$4,174,297.09	0.013	\$54,087.25
57	100	\$231,449.45	\$15,044.21	\$10,021.76	\$25,065.97	\$4,199,363.56	\$4,186,830.58	\$337,751.62	\$4,537,115.19	0.012	\$54,398.41
58	101	\$241,679.51	\$15,709.17	\$10,464.72	\$26,173.89	\$4,563,289.08	\$4,550,202.13	\$367,064.81	\$4,930,353.88	0.011	\$54,698.99
59	102	\$252,361.75	\$16,403.51	\$10,927.26	\$27,330.78	\$4,957,684.66	\$4,944,019.27	\$398,834.03	\$5,356,518.70	0.010	\$54,989.36
60	103	\$263,516.13	\$17,128.55	\$11,410.25	\$28,538.80	\$5,385,057.49	\$5,370,788.09	\$433,261.48	\$5,818,318.97	0.009	\$55,269.87

Retiree Age at Death (Table 4)	Spouse Age at Retiree Death (Table 5)	Spouse Age at Death (Table 4, using setback (3)	Value of Retiree's Retirement Pay at Time of Death (4)	Spouse receives 55% Up to Age 62, 35 % Age 62 or Older (5)	Present Value Factor (6)	Present Value (7)	Aggregate Present Value (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
77	73	87					
	73		\$85,591.63	\$29,957.07	0.071	\$2,140.54	\$2,140.54
	74		\$89,374.78	\$31,281.17	0.066	\$2,068.25	\$4,208.79
	75		\$93,325.15	\$32,663.80	0.061	\$1,998.39	\$6,207.19
	76		\$97,450.12	\$34,107.54	0.057	\$1,930.90	\$8,138.09
	77		\$101,757.41	\$35,615.09	0.052	\$1,865.69	\$10,003.77
	78		\$106,255.09	\$37,189.28	0.048	\$1,802.67	\$11,806.45
	79		\$110,951.56	\$38,833.05	0.045	\$1,741.79	\$13,548.23
	80		\$115,855.62	\$40,549.47	0.042	\$1,682.96	\$15,231.19
	81		\$120,976.44	\$42,341.75	0.038	\$1,626.12	\$16,857.31
	82		\$126,323.60	\$44,213.26	0.036	\$1,571.20	\$18,428.51
	83		\$131,907.10	\$46,167.49	0.033	\$1,518.13	\$19,946.64
	84		\$137,737.40	\$48,208.09	0.030	\$1,466.86	\$21,413.50
	85		\$143,825.39	\$50,338.89	0.028	\$1,417.32	\$22,830.82
	86		\$150,182.47	\$52,563.87	0.026	\$1,369.45	\$24,200.27

Table 9.8 Present Value of Benefits for E-8

Average Retirement Age/Number of Years of Service	End of Year	Age at End of Year	Yearly Retired Pay	Retiree Cost (6.5% x column 4)	Govt. Cost (4.33% x column 4)	Each Year's Total Contribution	Aggregate Contribution	Average Aggregate Contribution	Return Based on Rate of Return (Table 8)	End of Year Aggregate Value of Contributions	Present Value Factor	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age 46												
26 Years									8.067%			
1	47		\$28,896.66	\$1,878.28	\$1,251.23	\$3,129.51	\$3,129.51	\$1,564.75	\$126.23	\$3,255.74	0.925	\$3,012.62
2	48		\$30,173.89	\$1,961.30	\$1,306.53	\$3,267.83	\$6,523.57	\$4,889.65	\$394.45	\$6,918.02	0.856	\$5,923.40
3	49		\$31,507.58	\$2,047.99	\$1,364.28	\$3,412.27	\$10,330.29	\$8,624.15	\$695.71	\$11,026.00	0.792	\$8,735.80
4	50		\$32,900.21	\$2,138.51	\$1,424.58	\$3,563.09	\$14,589.09	\$12,807.55	\$1,033.18	\$15,622.28	0.733	\$11,453.12
5	51		\$34,354.40	\$2,233.04	\$1,487.55	\$3,720.58	\$19,342.86	\$17,482.57	\$1,410.32	\$20,753.18	0.678	\$14,078.58
6	52		\$35,872.87	\$2,331.74	\$1,553.30	\$3,885.03	\$24,638.21	\$22,695.69	\$1,830.86	\$26,469.07	0.628	\$16,615.28
7	53		\$37,458.45	\$2,434.80	\$1,621.95	\$4,056.75	\$30,525.82	\$28,497.45	\$2,298.89	\$32,824.71	0.581	\$19,066.23
8	54		\$39,114.11	\$2,542.42	\$1,693.64	\$4,236.06	\$37,060.77	\$34,942.74	\$2,818.83	\$39,879.60	0.537	\$21,434.31
9	55		\$40,842.96	\$2,654.79	\$1,768.50	\$4,423.29	\$44,302.89	\$42,091.24	\$3,395.50	\$47,698.39	0.497	\$23,722.33
10	56		\$42,648.21	\$2,772.13	\$1,846.67	\$4,618.80	\$52,317.19	\$50,007.79	\$4,034.13	\$56,351.32	0.460	\$25,932.99
11	57		\$44,533.26	\$2,894.66	\$1,928.29	\$4,822.95	\$61,174.27	\$58,762.80	\$4,740.39	\$65,914.67	0.426	\$28,068.90
12	58		\$46,501.64	\$3,022.61	\$2,013.52	\$5,036.13	\$70,950.80	\$68,432.73	\$5,520.47	\$76,471.26	0.394	\$30,132.59
13	59		\$48,557.01	\$3,156.21	\$2,102.52	\$5,258.72	\$81,729.99	\$79,100.63	\$6,381.05	\$88,111.04	0.365	\$32,126.49
14	60		\$50,703.23	\$3,295.71	\$2,195.45	\$5,491.16	\$93,602.20	\$90,856.82	\$7,329.40	\$100,931.60	0.337	\$34,052.97
15	61		\$52,944.31	\$3,441.38	\$2,292.49	\$5,733.87	\$106,665.47	\$103,799.53	\$8,373.43	\$115,038.89	0.312	\$35,914.30
16	62		\$55,284.45	\$3,593.49	\$2,393.82	\$5,987.31	\$121,026.20	\$118,032.55	\$9,521.69	\$130,547.89	0.289	\$37,712.68
17	63		\$57,728.02	\$3,752.32	\$2,499.62	\$6,251.94	\$136,799.83	\$133,673.86	\$10,783.47	\$147,583.30	0.267	\$39,488.34
18	64		\$60,279.60	\$3,918.17	\$2,610.11	\$6,528.28	\$154,111.58	\$150,847.44	\$12,168.86	\$166,280.44	0.247	\$41,129.03
19	65		\$62,943.96	\$4,091.36	\$2,725.47	\$6,816.83	\$173,097.28	\$169,688.86	\$13,688.80	\$186,786.08	0.229	\$42,751.03
20	66		\$65,726.08	\$4,272.20	\$2,845.94	\$7,118.13	\$193,904.21	\$190,345.14	\$15,355.14	\$209,259.35	0.212	\$44,318.17
21	67		\$68,631.17	\$4,461.03	\$2,971.73	\$7,432.78	\$216,692.11	\$212,975.73	\$17,180.75	\$233,872.86	0.196	\$45,832.30
22	68		\$71,664.67	\$4,658.20	\$3,103.08	\$7,761.28	\$241,634.15	\$237,753.50	\$19,179.58	\$260,933.72	0.181	\$47,295.20
23	69		\$74,832.25	\$4,864.10	\$3,240.24	\$8,104.33	\$268,918.05	\$264,865.89	\$21,366.73	\$290,284.78	0.168	\$48,708.62
24	70		\$78,139.84	\$5,079.09	\$3,383.45	\$8,467.54	\$298,747.33	\$294,516.06	\$23,758.61	\$322,505.94	0.155	\$50,074.21
25	71		\$81,593.62	\$5,303.59	\$3,533.00	\$8,836.59	\$331,342.53	\$326,924.23	\$26,372.98	\$357,715.51	0.144	\$51,393.59
26	72		\$85,200.05	\$5,538.00	\$3,689.16	\$9,221.17	\$366,942.67	\$362,329.09	\$29,229.09	\$396,171.76	0.133	\$52,668.33
27	73		\$88,965.90	\$5,782.78	\$3,852.22	\$9,635.01	\$405,806.77	\$400,989.26	\$32,347.80	\$438,154.57	0.123	\$53,899.94
28	74		\$92,898.19	\$6,038.38	\$4,022.49	\$10,050.87	\$448,215.44	\$443,185.01	\$35,751.73	\$483,967.18	0.114	\$55,089.86
29	75		\$97,004.29	\$6,305.28	\$4,200.29	\$10,505.56	\$494,472.74	\$489,219.96	\$39,465.37	\$533,938.12	0.105	\$56,239.51
30	76		\$101,291.88	\$6,583.97	\$4,385.94	\$10,969.91	\$544,908.03	\$539,423.07	\$43,515.26	\$588,423.29	0.097	\$57,350.25
31	77		\$105,768.98	\$6,874.98	\$4,579.80	\$11,454.78	\$599,878.07	\$594,150.68	\$47,930.14	\$647,808.20	0.090	\$58,423.39
32	78		\$110,443.97	\$7,178.86	\$4,782.22	\$11,961.08	\$659,769.28	\$653,788.74	\$52,741.14	\$712,510.42	0.083	\$59,460.20
33	79		\$115,325.59	\$7,496.16	\$4,993.60	\$12,489.76	\$725,300.18	\$718,755.30	\$57,981.99	\$782,982.17	0.077	\$60,461.91
34	80		\$120,422.98	\$7,827.49	\$5,214.32	\$13,041.81	\$796,023.98	\$789,503.08	\$63,689.21	\$859,713.19	0.071	\$61,429.71
35	81		\$125,745.68	\$8,173.47	\$5,444.79	\$13,618.26	\$873,331.45	\$866,522.32	\$69,902.36	\$943,233.81	0.066	\$62,364.73
36	82		\$131,303.64	\$8,534.74	\$5,685.45	\$14,220.18	\$957,453.99	\$950,349.90	\$76,664.24	\$1,034,118.23	0.061	\$63,268.09

Table 9.9 Present Value of Payments for E-9

37	83	\$137,107.26	\$8,911.97	\$5,936.74	\$14,848.72	\$1,048,966.95	\$1,041,542.59	\$84,021.24	\$1,132,988.19	0.057	\$84,140.86
38	84	\$143,167.40	\$9,305.88	\$6,199.15	\$15,505.03	\$1,148,493.22	\$1,140,740.71	\$92,023.55	\$1,240,516.77	0.052	\$84,984.07
39	85	\$149,485.40	\$9,717.20	\$6,473.15	\$16,190.35	\$1,256,707.12	\$1,248,611.95	\$100,725.53	\$1,357,432.65	0.048	\$85,798.71
40	86	\$156,103.10	\$10,146.70	\$6,759.26	\$16,905.97	\$1,374,338.62	\$1,365,885.63	\$110,185.99	\$1,484,524.61	0.045	\$86,585.76
41	87	\$163,002.85	\$10,595.19	\$7,058.02	\$17,653.21	\$1,502,177.82	\$1,493,351.21	\$120,468.64	\$1,622,646.46	0.042	\$87,346.14
42	88	\$170,207.58	\$11,063.49	\$7,369.99	\$18,433.48	\$1,641,079.94	\$1,631,863.20	\$131,642.40	\$1,772,722.35	0.038	\$88,080.75
43	89	\$177,730.75	\$11,552.50	\$7,695.74	\$19,248.24	\$1,791,970.59	\$1,782,346.47	\$143,781.89	\$1,935,752.48	0.036	\$88,790.48
44	90	\$185,586.45	\$12,063.12	\$8,035.89	\$20,099.01	\$1,955,851.49	\$1,945,801.98	\$156,967.85	\$2,112,819.34	0.033	\$89,476.14
45	91	\$193,789.37	\$12,596.31	\$8,391.08	\$20,987.39	\$2,133,806.72	\$2,123,313.03	\$171,287.66	\$2,305,094.39	0.030	\$90,138.57
46	92	\$202,354.86	\$13,153.07	\$8,761.97	\$21,915.03	\$2,327,009.42	\$2,316,051.90	\$186,835.91	\$2,513,845.33	0.028	\$90,778.54
47	93	\$211,298.95	\$13,734.43	\$9,149.24	\$22,883.68	\$2,536,729.00	\$2,525,287.16	\$203,714.92	\$2,740,443.92	0.026	\$91,396.81
48	94	\$220,638.36	\$14,341.49	\$9,553.64	\$23,895.13	\$2,764,339.05	\$2,752,391.48	\$222,035.42	\$2,986,374.47	0.024	\$91,994.11
49	95	\$230,390.58	\$14,975.39	\$9,975.91	\$24,951.30	\$3,011,325.77	\$2,998,850.12	\$241,917.24	\$3,263,243.01	0.022	\$92,571.16
50	96	\$240,573.84	\$15,637.30	\$10,416.85	\$26,054.15	\$3,279,297.16	\$3,266,270.08	\$263,490.01	\$3,542,787.17	0.021	\$93,128.64
51	97	\$251,207.21	\$16,328.47	\$10,877.27	\$27,205.74	\$3,569,992.91	\$3,556,390.04	\$286,893.98	\$3,856,886.89	0.019	\$93,687.20
52	98	\$262,310.56	\$17,050.19	\$11,358.05	\$28,408.23	\$3,885,295.12	\$3,871,091.01	\$312,280.91	\$4,197,576.04	0.018	\$94,187.49
53	99	\$273,904.69	\$17,803.80	\$11,860.07	\$29,663.88	\$4,227,239.91	\$4,212,407.98	\$339,814.95	\$4,567,054.87	0.016	\$94,690.13
54	100	\$286,011.28	\$18,590.73	\$12,384.29	\$30,975.02	\$4,598,029.89	\$4,582,542.38	\$369,673.69	\$4,967,703.58	0.015	\$95,175.70
55	101	\$298,652.98	\$19,412.44	\$12,931.67	\$32,344.12	\$5,000,047.70	\$4,983,875.64	\$402,049.25	\$5,402,096.95	0.014	\$95,644.79
56	102	\$311,853.44	\$20,270.47	\$13,503.25	\$33,773.73	\$5,435,870.67	\$5,418,983.81	\$437,149.42	\$5,873,020.10	0.013	\$96,097.96
57	103	\$325,637.36	\$21,166.43	\$14,100.10	\$35,266.53	\$5,908,286.62	\$5,890,653.36	\$475,199.01	\$6,383,485.63	0.012	\$96,535.73
58	104	\$340,030.53	\$22,101.98	\$14,723.32	\$36,825.31	\$6,420,310.94	\$6,401,998.28	\$516,441.13	\$6,936,752.07	0.011	\$96,958.64
59	105	\$355,059.88	\$23,078.89	\$15,374.09	\$38,452.99	\$6,975,205.06	\$6,955,978.56	\$561,138.79	\$7,536,343.85	0.010	\$97,367.18
60	106	\$370,753.53	\$24,098.98	\$16,053.63	\$40,152.61	\$7,576,496.45	\$7,556,420.15	\$609,576.41	\$8,186,072.87	0.009	\$97,761.84

Table 9.9 Present Value of Payments for E-9

Retiree Age at Death (Table 4)	Spouse Age at Retiree Death (Table 5)	Spouse Age at Death (Table 4, using setback)	Value of Retiree's Retirement Pay at Time of Death	Spouse receives 55% Up to Age 62, 35 % Age 62 or Older	Present Value Factor	Present Value	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
77	73	87					
	73		\$105,768.98	\$37,019.14	0.090	\$3,338.62	\$3,338.62
	74		\$110,443.97	\$38,655.39	0.083	\$3,225.86	\$6,564.48
	75		\$115,325.59	\$40,363.96	0.077	\$3,116.91	\$9,681.38
	76		\$120,422.98	\$42,148.04	0.071	\$3,011.63	\$12,693.02
	77		\$125,745.68	\$44,010.99	0.066	\$2,909.92	\$15,602.93
	78		\$131,303.64	\$45,956.27	0.061	\$2,811.64	\$18,414.57
	79		\$137,107.26	\$47,987.54	0.057	\$2,716.68	\$21,131.25
	80		\$143,167.40	\$50,108.59	0.052	\$2,624.92	\$23,756.17
	81		\$149,495.40	\$52,323.39	0.048	\$2,536.27	\$26,292.44
	82		\$156,103.10	\$54,636.08	0.045	\$2,450.61	\$28,743.04
	83		\$163,002.85	\$57,051.00	0.042	\$2,367.84	\$31,110.88
	84		\$170,207.58	\$59,572.65	0.038	\$2,287.87	\$33,398.75
	85		\$177,730.75	\$62,205.76	0.036	\$2,210.59	\$35,609.34
	86		\$185,586.45	\$64,955.26	0.033	\$2,135.93	\$37,745.28

Table 9.10 Present Value of Benefits for E-9

Average Retirement Age/Number of Years Service	End of Year	Age at End of Year	Yearly Retired Pay	Retiree Cost (6.5% x column 4)	Govt. Cost (4.33% x column 4)	Each Year's Total Contribution	Aggregate Contribution	Average Aggregate Contribution	Return Based on Rate of Return (Table 8)	End of Year Aggregate Value of Contributions	Present Value Factor	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age 43												
20 Years									8.067%			
1	44		\$27,399.60	\$1,780.97	\$1,186.40	\$2,967.38	\$2,967.38	\$1,483.69	\$119.69	\$3,087.07	0.925	\$2,856.54
2	45		\$28,610.66	\$1,859.69	\$1,238.84	\$3,098.53	\$6,185.60	\$4,636.33	\$374.01	\$6,559.61	0.856	\$5,616.53
3	46		\$29,875.25	\$1,941.89	\$1,293.60	\$3,235.49	\$9,795.10	\$8,177.36	\$659.67	\$10,454.77	0.792	\$8,283.22
4	47		\$31,195.74	\$2,027.72	\$1,350.78	\$3,378.50	\$13,833.27	\$12,144.02	\$979.66	\$14,812.93	0.733	\$10,859.76
5	48		\$32,574.59	\$2,117.35	\$1,410.48	\$3,521.83	\$18,340.76	\$16,576.84	\$1,337.25	\$19,678.01	0.678	\$13,349.21
6	49		\$34,014.39	\$2,210.94	\$1,472.82	\$3,683.76	\$23,361.77	\$21,519.89	\$1,736.01	\$25,097.78	0.628	\$15,754.49
7	50		\$35,517.82	\$2,308.66	\$1,537.92	\$3,846.58	\$28,944.36	\$27,021.07	\$2,179.79	\$31,124.15	0.581	\$18,078.46
8	51		\$37,087.71	\$2,410.70	\$1,605.90	\$4,016.60	\$35,140.75	\$33,132.45	\$2,672.79	\$37,813.54	0.537	\$20,323.86
9	52		\$38,726.99	\$2,517.25	\$1,676.88	\$4,194.13	\$42,007.67	\$39,910.61	\$3,219.59	\$45,227.26	0.497	\$22,493.34
10	53		\$40,438.72	\$2,628.52	\$1,751.00	\$4,379.51	\$49,606.78	\$47,417.02	\$3,825.13	\$53,431.91	0.460	\$24,589.47
11	54		\$42,226.11	\$2,744.70	\$1,828.39	\$4,573.09	\$58,005.00	\$55,781.45	\$4,498.81	\$62,499.80	0.426	\$26,614.72
12	55		\$44,092.51	\$2,866.01	\$1,909.21	\$4,775.22	\$67,275.02	\$64,887.41	\$5,234.47	\$72,509.49	0.394	\$28,571.50
13	56		\$46,041.40	\$2,992.69	\$1,993.59	\$4,982.28	\$77,495.77	\$75,002.63	\$6,050.46	\$83,546.23	0.365	\$30,432.11
14	57		\$48,076.43	\$3,124.97	\$2,081.71	\$5,206.68	\$88,752.91	\$86,149.57	\$6,949.69	\$95,702.60	0.337	\$32,288.78
15	58		\$50,201.40	\$3,263.09	\$2,173.72	\$5,436.81	\$101,139.41	\$98,421.00	\$7,939.62	\$109,079.03	0.312	\$34,053.68
16	59		\$52,420.31	\$3,407.32	\$2,269.80	\$5,677.12	\$114,756.15	\$111,917.59	\$9,028.39	\$123,784.54	0.289	\$35,758.89
17	60		\$54,737.28	\$3,557.92	\$2,370.12	\$5,928.05	\$129,712.59	\$126,748.57	\$10,224.81	\$139,937.40	0.267	\$37,406.43
18	61		\$57,156.67	\$3,715.18	\$2,474.88	\$6,190.07	\$146,127.47	\$143,032.43	\$11,538.43	\$157,665.89	0.247	\$38,998.24
19	62		\$59,683.00	\$3,879.39	\$2,584.27	\$6,463.67	\$164,129.56	\$160,897.73	\$12,979.62	\$177,109.18	0.229	\$40,536.22
20	63		\$62,320.99	\$4,050.86	\$2,698.50	\$6,749.36	\$183,858.54	\$180,483.86	\$14,559.63	\$198,418.18	0.212	\$42,022.17
21	64		\$65,075.57	\$4,229.91	\$2,817.77	\$7,047.68	\$205,465.86	\$201,942.02	\$16,290.66	\$221,756.52	0.196	\$43,457.85
22	65		\$67,951.91	\$4,416.87	\$2,942.32	\$7,359.19	\$229,115.72	\$225,436.12	\$18,185.93	\$247,301.65	0.181	\$44,844.96
23	66		\$70,955.39	\$4,612.10	\$3,072.37	\$7,684.47	\$254,986.12	\$251,143.88	\$20,259.78	\$275,245.89	0.168	\$46,185.15
24	67		\$74,091.62	\$4,815.96	\$3,208.17	\$8,024.12	\$283,270.01	\$279,257.95	\$22,527.74	\$305,797.75	0.155	\$47,479.99
25	68		\$77,366.47	\$5,028.32	\$3,349.97	\$8,378.79	\$314,176.54	\$309,987.15	\$25,006.66	\$339,183.21	0.144	\$48,731.03
26	69		\$80,786.06	\$5,251.09	\$3,498.04	\$8,749.13	\$347,932.34	\$343,557.77	\$27,714.81	\$375,647.14	0.133	\$49,939.73
27	70		\$84,356.81	\$5,483.19	\$3,652.65	\$9,135.84	\$384,782.98	\$380,215.06	\$30,671.95	\$415,454.93	0.123	\$51,107.52
28	71		\$88,085.38	\$5,725.55	\$3,814.10	\$9,539.65	\$424,994.58	\$420,224.76	\$33,899.53	\$458,894.11	0.114	\$52,235.80
29	72		\$91,978.75	\$5,978.62	\$3,982.68	\$9,961.30	\$468,855.41	\$463,874.76	\$37,420.78	\$506,276.19	0.105	\$53,325.89
30	73		\$96,044.21	\$6,242.87	\$4,158.71	\$10,401.59	\$516,677.77	\$511,476.98	\$41,260.85	\$557,938.62	0.097	\$54,379.08
31	74		\$100,289.37	\$6,518.81	\$4,342.53	\$10,861.34	\$568,799.96	\$563,369.29	\$45,447.00	\$614,246.96	0.090	\$55,396.63
32	75		\$104,722.16	\$6,806.94	\$4,534.47	\$11,341.41	\$625,588.37	\$619,917.87	\$50,008.76	\$675,597.13	0.083	\$56,379.72
33	76		\$109,350.88	\$7,107.81	\$4,734.89	\$11,842.70	\$687,439.83	\$681,518.48	\$54,978.10	\$742,417.92	0.077	\$57,329.54
34	77		\$114,184.18	\$7,421.97	\$4,944.18	\$12,366.15	\$754,784.07	\$748,601.00	\$60,389.64	\$815,173.71	0.071	\$58,247.20
35	78		\$119,231.13	\$7,750.02	\$5,162.71	\$12,912.73	\$828,086.44	\$821,630.08	\$66,280.90	\$894,367.34	0.066	\$59,133.78
36	79		\$124,501.14	\$8,092.57	\$5,390.90	\$13,483.47	\$907,850.82	\$901,109.08	\$72,692.47	\$980,543.29	0.061	\$59,990.34

Table 9.11 Present Value of Payments for O-4

37	80	\$130,004.09	\$8,450.27	\$5,629.18	\$14,079.44	\$994,622.73	\$987,583.01	\$79,668.32	\$1,074,291.05	0.057	\$60,817.89
38	81	\$135,750.27	\$8,823.77	\$5,877.99	\$14,701.75	\$1,088,992.81	\$1,081,641.93	\$87,256.05	\$1,176,248.86	0.052	\$61,617.41
39	82	\$141,750.43	\$9,213.78	\$6,137.79	\$15,351.57	\$1,191,600.43	\$1,183,924.65	\$95,507.20	\$1,287,107.63	0.048	\$62,389.85
40	83	\$148,015.80	\$9,621.03	\$6,409.08	\$16,030.11	\$1,303,137.74	\$1,295,122.69	\$104,477.55	\$1,407,615.29	0.045	\$63,136.12
41	84	\$154,558.10	\$10,046.28	\$6,692.37	\$16,738.64	\$1,424,353.93	\$1,415,984.61	\$114,227.48	\$1,538,581.41	0.042	\$63,857.11
42	85	\$161,389.57	\$10,490.32	\$6,988.17	\$17,478.49	\$1,556,059.90	\$1,547,320.66	\$124,822.36	\$1,680,882.26	0.038	\$64,553.67
43	86	\$168,522.99	\$10,953.99	\$7,297.05	\$18,251.04	\$1,699,133.30	\$1,690,007.78	\$136,332.93	\$1,835,466.23	0.036	\$65,226.62
44	87	\$175,971.71	\$11,438.16	\$7,619.57	\$19,057.74	\$1,854,523.96	\$1,844,995.10	\$148,835.75	\$2,003,359.72	0.033	\$65,876.77
45	88	\$183,749.66	\$11,943.73	\$7,956.36	\$19,900.09	\$2,023,259.81	\$2,013,309.76	\$162,413.70	\$2,185,673.51	0.030	\$66,504.87
46	89	\$191,871.39	\$12,471.64	\$8,308.03	\$20,779.67	\$2,206,453.18	\$2,196,063.34	\$177,156.43	\$2,383,609.61	0.028	\$67,111.69
47	90	\$200,352.11	\$13,022.89	\$8,675.25	\$21,698.13	\$2,405,307.74	\$2,394,458.67	\$193,160.98	\$2,598,468.72	0.026	\$67,697.93
48	91	\$209,207.67	\$13,598.50	\$9,058.69	\$22,657.19	\$2,621,125.91	\$2,609,797.32	\$210,532.35	\$2,831,658.26	0.024	\$68,264.29
49	92	\$218,454.65	\$14,199.55	\$9,459.09	\$23,658.64	\$2,855,316.90	\$2,843,487.58	\$229,384.14	\$3,084,701.04	0.022	\$68,811.44
50	93	\$228,110.34	\$14,827.17	\$9,877.18	\$24,704.35	\$3,109,405.39	\$3,097,053.22	\$249,899.28	\$3,359,244.68	0.021	\$69,340.04
51	94	\$238,192.82	\$15,482.53	\$10,313.75	\$25,796.28	\$3,385,040.96	\$3,372,142.82	\$272,030.76	\$3,657,071.72	0.019	\$69,850.70
52	95	\$248,720.94	\$16,166.86	\$10,769.62	\$26,936.48	\$3,684,008.20	\$3,670,539.96	\$296,102.46	\$3,980,110.66	0.018	\$70,344.03
53	96	\$259,714.41	\$16,881.44	\$11,245.63	\$28,127.07	\$4,008,237.73	\$3,994,174.19	\$322,210.03	\$4,330,447.76	0.016	\$70,820.63
54	97	\$271,193.79	\$17,627.60	\$11,742.69	\$29,370.29	\$4,359,818.04	\$4,345,132.90	\$350,521.87	\$4,710,339.92	0.015	\$71,281.05
55	98	\$283,180.55	\$18,406.74	\$12,261.72	\$30,668.45	\$4,741,008.37	\$4,725,674.14	\$381,220.13	\$5,122,228.50	0.014	\$71,725.84
56	99	\$295,697.13	\$19,220.31	\$12,803.69	\$32,024.00	\$5,154,252.50	\$5,138,240.50	\$414,501.86	\$5,568,754.36	0.013	\$72,155.52
57	100	\$308,766.94	\$20,069.85	\$13,369.61	\$33,439.46	\$5,602,193.82	\$5,585,474.09	\$450,580.20	\$6,052,774.02	0.012	\$72,570.62
58	101	\$322,414.44	\$20,956.94	\$13,960.55	\$34,917.48	\$6,087,691.50	\$6,070,232.76	\$489,685.68	\$6,577,377.18	0.011	\$72,971.62
59	102	\$336,665.16	\$21,883.24	\$14,577.60	\$36,460.84	\$6,613,838.02	\$6,595,607.60	\$532,067.66	\$7,145,905.68	0.010	\$73,358.99
60	103	\$351,545.76	\$22,850.47	\$15,221.93	\$38,072.41	\$7,183,978.09	\$7,164,941.88	\$577,995.86	\$7,761,973.95	0.009	\$73,733.20

Table 9.11 Present Value of Payments for O-4

Retiree Age at Death (Table 4)	Spouse Age at Retiree Death (Table 5)	Spouse Age at Death (Table 4, using setback)	Value of Retiree's Retirement Pay at Time of Death	Spouse receives 55% Up to Age 62, 35 % Age 62 or Older	Present Value Factor	Present Value	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
80	75	89					
	75		\$130,004.09	\$45,501.43	0.057	\$2,575.93	\$2,575.93
	76		\$135,750.27	\$47,512.59	0.052	\$2,488.93	\$5,064.86
	77		\$141,750.43	\$49,612.65	0.048	\$2,404.87	\$7,469.73
	78		\$148,015.80	\$51,805.53	0.045	\$2,323.65	\$9,793.38
	79		\$154,558.10	\$54,095.34	0.042	\$2,245.17	\$12,038.55
	80		\$161,389.57	\$56,486.35	0.038	\$2,169.34	\$14,207.88
	81		\$168,522.99	\$58,983.05	0.036	\$2,096.07	\$16,303.95
	82		\$175,971.70	\$61,590.10	0.033	\$2,025.28	\$18,329.23
	83		\$183,749.65	\$64,312.38	0.030	\$1,956.87	\$20,286.10
	84		\$191,871.39	\$67,154.99	0.028	\$1,890.78	\$22,176.88
	85		\$200,352.10	\$70,123.24	0.026	\$1,826.92	\$24,003.81
	86		\$209,207.67	\$73,222.68	0.024	\$1,765.22	\$25,769.02
	87		\$218,454.64	\$76,459.13	0.022	\$1,705.60	\$27,474.62
	88		\$228,110.34	\$79,838.62	0.021	\$1,647.99	\$29,122.62

Table 9.12 Present Value of Benefits for O-4

Average Retirement Age/Number of Years Service	End of Year	Age at End of Year	Yearly Retired Pay	Retiree Cost (6.5% x column 4)	Govt. Cost (4.33% x column 4)	Each Year's Total Contribution	Aggregate Contribution	Average Aggregate Contribution	Return Based on Rate of Return (Table 8)	End of Year Aggregate Value of Contributions	Present Value Factor	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age 46												
23 Years									8.067%			
1	47		\$37,690.56	\$2,449.89	\$1,632.00	\$4,081.89	\$4,081.89	\$2,040.94	\$164.64	\$4,246.53	0.925	\$3,929.43
2	48		\$39,356.48	\$2,558.17	\$1,704.14	\$4,262.31	\$8,508.84	\$6,377.68	\$514.49	\$9,023.33	0.856	\$7,726.03
3	49		\$41,096.04	\$2,671.24	\$1,779.46	\$4,450.70	\$13,474.03	\$11,248.68	\$907.43	\$14,381.46	0.792	\$11,394.29
4	50		\$42,912.48	\$2,789.31	\$1,858.11	\$4,647.42	\$19,028.88	\$16,705.17	\$1,347.61	\$20,376.49	0.733	\$14,938.56
5	51		\$44,809.22	\$2,912.60	\$1,940.24	\$4,852.84	\$25,229.32	\$22,802.90	\$1,839.51	\$27,068.83	0.678	\$18,363.01
6	52		\$46,789.78	\$3,041.34	\$2,026.00	\$5,067.33	\$32,136.17	\$29,602.50	\$2,388.03	\$34,524.20	0.628	\$21,671.69
7	53		\$48,857.89	\$3,175.76	\$2,115.55	\$5,291.31	\$39,815.51	\$37,169.86	\$2,998.49	\$42,814.00	0.581	\$24,868.51
8	54		\$51,017.41	\$3,316.13	\$2,209.05	\$5,525.19	\$48,339.19	\$45,576.60	\$3,676.66	\$52,015.85	0.537	\$27,957.25
9	55		\$53,272.38	\$3,462.70	\$2,306.69	\$5,769.40	\$57,785.25	\$54,900.55	\$4,428.83	\$62,214.08	0.497	\$30,941.57
10	56		\$55,627.02	\$3,615.76	\$2,408.65	\$6,024.41	\$68,238.48	\$65,226.28	\$5,261.80	\$73,500.29	0.460	\$33,824.98
11	57		\$58,085.73	\$3,775.57	\$2,515.11	\$6,290.68	\$79,790.97	\$76,645.63	\$6,183.00	\$85,973.98	0.426	\$36,610.90
12	58		\$60,653.12	\$3,942.45	\$2,626.28	\$6,568.73	\$92,542.71	\$89,258.34	\$7,200.47	\$99,743.18	0.394	\$39,302.61
13	59		\$63,333.99	\$4,116.71	\$2,742.36	\$6,859.07	\$106,607.25	\$103,172.72	\$8,322.94	\$114,925.19	0.365	\$41,903.31
14	60		\$66,133.35	\$4,298.67	\$2,863.57	\$7,162.24	\$122,087.44	\$118,506.32	\$9,559.90	\$131,647.34	0.337	\$44,418.08
15	61		\$69,056.45	\$4,488.67	\$2,990.14	\$7,478.81	\$139,126.15	\$135,386.75	\$10,921.65	\$150,047.80	0.312	\$46,843.83
16	62		\$72,108.74	\$4,687.07	\$3,122.31	\$7,809.38	\$157,857.18	\$153,952.49	\$12,419.35	\$170,276.53	0.289	\$49,189.49
17	63		\$75,295.95	\$4,894.24	\$3,260.31	\$8,154.55	\$178,431.08	\$174,353.80	\$14,065.12	\$192,496.20	0.267	\$51,455.83
18	64		\$78,624.03	\$5,110.56	\$3,404.42	\$8,514.98	\$201,011.18	\$196,753.69	\$15,872.12	\$216,883.30	0.247	\$53,645.51
19	65		\$82,099.21	\$5,336.45	\$3,554.90	\$8,891.34	\$225,774.65	\$221,328.98	\$17,854.61	\$243,629.26	0.229	\$55,761.13
20	66		\$85,728.00	\$5,572.32	\$3,712.02	\$9,284.34	\$252,913.60	\$248,271.43	\$20,028.06	\$272,941.66	0.212	\$57,805.18
21	67		\$89,517.17	\$5,818.62	\$3,876.09	\$9,694.71	\$282,636.37	\$277,789.01	\$22,409.24	\$305,045.60	0.196	\$59,780.09
22	68		\$93,473.83	\$6,075.80	\$4,047.42	\$10,123.22	\$315,168.82	\$310,107.21	\$25,016.35	\$340,185.17	0.181	\$61,688.19
23	69		\$97,605.38	\$6,344.35	\$4,226.31	\$10,570.66	\$350,755.83	\$345,470.50	\$27,869.11	\$378,624.94	0.168	\$63,531.74
24	70		\$101,919.54	\$6,624.77	\$4,413.12	\$11,037.89	\$389,662.82	\$384,143.88	\$30,988.89	\$420,651.71	0.155	\$65,312.91
25	71		\$106,424.38	\$6,917.58	\$4,608.18	\$11,525.76	\$432,177.47	\$426,414.59	\$34,398.86	\$466,576.34	0.144	\$67,033.81
26	72		\$111,128.34	\$7,223.34	\$4,811.86	\$12,035.20	\$478,611.53	\$472,593.93	\$38,124.15	\$516,735.69	0.133	\$68,696.49
27	73		\$116,040.21	\$7,542.61	\$5,024.54	\$12,567.15	\$529,302.84	\$523,019.26	\$42,191.96	\$571,494.81	0.123	\$70,302.89
28	74		\$121,169.19	\$7,876.00	\$5,246.63	\$13,122.62	\$584,617.43	\$578,056.12	\$46,631.79	\$631,249.21	0.114	\$71,854.94
29	75		\$126,524.86	\$8,224.12	\$5,478.53	\$13,702.64	\$644,951.86	\$638,100.54	\$51,475.57	\$696,427.43	0.105	\$73,354.45
30	76		\$132,117.26	\$8,587.62	\$5,720.68	\$14,308.30	\$710,735.73	\$703,581.58	\$56,757.93	\$767,493.65	0.097	\$74,803.21
31	77		\$137,956.85	\$8,967.19	\$5,973.53	\$14,940.73	\$782,434.38	\$774,964.02	\$62,516.35	\$844,950.73	0.090	\$76,202.93
32	78		\$144,054.54	\$9,363.54	\$6,237.56	\$15,601.11	\$860,551.83	\$852,751.28	\$68,791.45	\$929,343.28	0.083	\$77,555.27
33	79		\$150,421.75	\$9,777.41	\$6,513.26	\$16,290.68	\$945,633.95	\$937,488.62	\$75,627.21	\$1,021,261.16	0.077	\$78,861.82
34	80		\$157,070.39	\$10,209.58	\$6,801.15	\$17,010.72	\$1,038,271.88	\$1,029,766.52	\$83,071.27	\$1,121,343.15	0.071	\$80,124.14
35	81		\$164,012.90	\$10,660.84	\$7,101.76	\$17,762.60	\$1,139,105.75	\$1,130,224.45	\$91,175.21	\$1,230,280.95	0.066	\$81,343.71
36	82		\$171,262.27	\$11,132.05	\$7,415.66	\$18,547.70	\$1,248,828.66	\$1,239,554.81	\$99,994.89	\$1,348,823.54	0.061	\$82,521.99

Table 9.13 Present Value of Payments for O-5

37	83	\$178,832.06	\$11,624.08	\$7,743.43	\$19,367.51	\$1,368,191.06	\$1,358,507.30	\$109,590.78	\$1,477,781.84	0.057	\$83,660.36
38	84	\$186,736.44	\$12,137.87	\$8,085.69	\$20,223.56	\$1,498,005.40	\$1,487,893.62	\$120,028.38	\$1,618,033.78	0.052	\$84,760.17
39	85	\$194,990.19	\$12,674.36	\$8,443.08	\$21,117.44	\$1,639,151.21	\$1,628,592.49	\$131,378.56	\$1,770,529.77	0.048	\$85,822.73
40	86	\$203,608.76	\$13,234.57	\$8,816.26	\$22,050.83	\$1,792,580.60	\$1,781,555.18	\$143,718.06	\$1,936,298.65	0.045	\$86,849.29
41	87	\$212,608.27	\$13,819.54	\$9,205.94	\$23,025.48	\$1,959,324.13	\$1,947,811.39	\$157,129.95	\$2,116,454.07	0.042	\$87,841.07
42	88	\$222,005.55	\$14,430.36	\$9,612.84	\$24,043.20	\$2,140,497.28	\$2,128,475.68	\$171,704.13	\$2,312,201.41	0.038	\$88,799.25
43	89	\$231,818.20	\$15,068.18	\$10,037.73	\$25,105.91	\$2,337,307.32	\$2,324,754.36	\$187,537.93	\$2,524,845.25	0.036	\$89,724.96
44	90	\$242,064.56	\$15,734.20	\$10,481.40	\$26,215.59	\$2,551,060.85	\$2,537,953.05	\$204,736.67	\$2,755,797.52	0.033	\$90,619.29
45	91	\$252,763.81	\$16,429.65	\$10,944.67	\$27,374.32	\$2,783,171.84	\$2,769,484.68	\$223,414.33	\$3,006,586.17	0.030	\$91,483.30
46	92	\$263,935.98	\$17,155.84	\$11,428.43	\$28,584.27	\$3,035,170.43	\$3,020,878.30	\$243,694.25	\$3,276,964.69	0.028	\$92,318.03
47	93	\$275,601.95	\$17,914.13	\$11,933.56	\$29,847.69	\$3,308,712.38	\$3,293,788.53	\$265,709.92	\$3,574,422.30	0.026	\$93,124.45
48	94	\$287,783.55	\$18,705.93	\$12,461.03	\$31,166.96	\$3,605,589.26	\$3,590,005.78	\$289,605.77	\$3,895,195.02	0.024	\$93,903.53
49	95	\$300,503.58	\$19,532.73	\$13,011.81	\$32,544.54	\$3,927,739.56	\$3,911,467.29	\$315,538.07	\$4,243,277.63	0.022	\$94,656.19
50	96	\$313,785.84	\$20,396.08	\$13,586.93	\$33,983.01	\$4,277,260.64	\$4,260,269.13	\$343,675.91	\$4,620,936.55	0.021	\$95,383.32
51	97	\$327,655.18	\$21,297.59	\$14,187.47	\$35,485.06	\$4,656,421.60	\$4,638,679.07	\$374,202.24	\$5,030,623.84	0.019	\$96,085.78
52	98	\$342,137.54	\$22,238.94	\$14,814.56	\$37,053.50	\$5,067,677.34	\$5,049,150.59	\$407,314.98	\$5,474,992.32	0.018	\$96,764.41
53	99	\$357,260.01	\$23,221.90	\$15,469.36	\$38,691.26	\$5,513,683.58	\$5,494,337.95	\$443,228.24	\$5,956,911.82	0.016	\$97,420.00
54	100	\$373,050.91	\$24,248.31	\$16,153.10	\$40,401.41	\$5,997,313.23	\$5,977,112.52	\$482,173.67	\$6,479,486.90	0.015	\$98,053.35
55	101	\$389,539.76	\$25,320.08	\$16,867.07	\$42,187.16	\$6,521,674.05	\$6,500,580.48	\$524,401.83	\$7,046,075.88	0.014	\$98,665.20
56	102	\$406,757.41	\$26,439.23	\$17,612.60	\$44,051.83	\$7,090,127.71	\$7,068,101.79	\$570,183.77	\$7,660,311.48	0.013	\$99,256.27
57	103	\$424,736.09	\$27,607.85	\$18,391.07	\$45,998.92	\$7,706,310.40	\$7,683,310.94	\$619,812.69	\$8,326,123.09	0.012	\$99,827.27
58	104	\$443,509.43	\$28,828.11	\$19,203.96	\$48,032.07	\$8,374,155.16	\$8,350,139.13	\$673,605.72	\$9,047,760.89	0.011	\$100,378.88
59	105	\$463,112.54	\$30,102.32	\$20,052.77	\$50,155.09	\$9,097,915.98	\$9,072,838.43	\$731,905.88	\$9,829,821.85	0.010	\$100,911.74
60	106	\$483,582.12	\$31,432.84	\$20,939.11	\$52,371.94	\$9,882,193.80	\$9,856,007.82	\$795,084.15	\$10,677,277.95	0.009	\$101,426.50

Table 9.13 Present Value of Payments for O-5

Retiree Age at Death (Table 4)	Spouse Age at Retiree Death (Table 5)	Spouse Age at Death (Table 4, using setback	Value of Retiree's Retirement Pay at Time of Death	Spouse receives 55% Up to Age 62, 35 % Age 62 or Older	Present Value Factor	Present Value	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
80	75	89					
	75		\$157,070.39	\$54,974.64	0.071	\$3,928.14	\$3,928.14
	76		\$164,012.90	\$57,404.52	0.066	\$3,795.47	\$7,723.61
	77		\$171,262.27	\$59,941.80	0.061	\$3,667.28	\$11,390.90
	78		\$178,832.06	\$62,591.22	0.057	\$3,543.42	\$14,934.32
	79		\$186,736.44	\$65,357.75	0.052	\$3,423.74	\$18,358.06
	80		\$194,990.19	\$68,246.57	0.048	\$3,308.11	\$21,666.17
	81		\$203,608.76	\$71,263.07	0.045	\$3,196.38	\$24,862.55
	82		\$212,608.27	\$74,412.89	0.042	\$3,088.42	\$27,950.98
	83		\$222,005.55	\$77,701.94	0.038	\$2,984.11	\$30,935.09
	84		\$231,818.20	\$81,136.37	0.036	\$2,883.33	\$33,818.42
	85		\$242,064.56	\$84,722.60	0.033	\$2,785.95	\$36,604.36
	86		\$252,763.81	\$88,467.33	0.030	\$2,691.85	\$39,296.22
	87		\$263,935.97	\$92,377.59	0.028	\$2,600.94	\$41,897.15
	88		\$275,601.94	\$96,460.68	0.026	\$2,513.09	\$44,410.24

Table 9.14 Present Value of Benefits for O-5

Average Retirement Age/Number of Years of Service	End of Year	Age at End of Year	Yearly Retired Pay	Retiree Cost (6.5% x column 4)	Govt. Cost (4.33% x column 4)	Each Year's Total Contribution	Aggregate Contribution	Average Aggregate Contribution	Return Based on Rate of Return (Table 8)	End of Year Aggregate Value of Contributions	Present Value Factor	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age 50												
27 Years									8.067%			
	1	51	\$54,223.02	\$3,524.50	\$2,347.86	\$5,872.35	\$5,872.35	\$2,936.18	\$236.86	\$6,109.21	0.925	\$5,653.02
	2	52	\$56,619.68	\$3,680.28	\$2,451.63	\$6,131.91	\$12,241.13	\$9,175.17	\$740.16	\$12,981.29	0.856	\$11,114.95
	3	53	\$59,122.27	\$3,842.95	\$2,559.99	\$6,402.94	\$19,384.23	\$16,182.76	\$1,305.46	\$20,689.69	0.792	\$16,392.25
	4	54	\$61,735.47	\$4,012.81	\$2,673.15	\$6,685.95	\$27,375.64	\$24,032.67	\$1,938.72	\$29,314.36	0.733	\$21,491.16
	5	55	\$64,464.18	\$4,190.17	\$2,791.30	\$6,981.47	\$36,295.83	\$32,805.09	\$2,646.39	\$38,942.22	0.678	\$26,417.69
	6	56	\$67,313.50	\$4,375.38	\$2,914.67	\$7,290.05	\$46,232.27	\$42,587.24	\$3,435.51	\$49,667.78	0.628	\$31,177.68
	7	57	\$70,288.75	\$4,568.77	\$3,043.50	\$7,612.27	\$57,280.05	\$53,473.92	\$4,313.74	\$61,593.79	0.581	\$35,776.75
	8	58	\$73,395.52	\$4,770.71	\$3,178.03	\$7,948.73	\$69,542.53	\$65,568.16	\$5,289.38	\$74,831.91	0.537	\$40,220.33
	9	59	\$76,639.60	\$4,981.57	\$3,318.49	\$8,300.07	\$83,131.98	\$78,981.94	\$6,371.47	\$89,503.45	0.497	\$44,513.67
	10	60	\$80,027.07	\$5,201.76	\$3,465.17	\$8,666.93	\$98,170.38	\$93,836.92	\$7,569.82	\$105,740.21	0.460	\$48,661.85
	11	61	\$83,564.26	\$5,431.68	\$3,618.33	\$9,050.01	\$114,790.22	\$110,265.21	\$8,895.09	\$123,685.31	0.426	\$52,669.77
	12	62	\$87,257.80	\$5,671.76	\$3,778.26	\$9,450.02	\$133,135.33	\$128,410.32	\$10,358.86	\$143,494.19	0.394	\$56,542.17
	13	63	\$91,114.60	\$5,922.45	\$3,945.26	\$9,867.71	\$153,361.90	\$148,428.05	\$11,973.69	\$165,335.59	0.365	\$60,283.63
	14	64	\$95,141.86	\$6,184.22	\$4,119.64	\$10,303.86	\$175,639.46	\$170,477.53	\$13,753.23	\$189,392.69	0.337	\$63,898.56
	15	65	\$99,347.13	\$6,457.56	\$4,301.73	\$10,759.29	\$200,151.98	\$194,772.33	\$15,712.28	\$215,864.27	0.312	\$67,391.28
	16	66	\$103,738.28	\$6,742.99	\$4,491.87	\$11,234.86	\$227,099.12	\$221,481.69	\$17,866.93	\$244,966.05	0.289	\$70,765.81
	17	67	\$108,323.51	\$7,041.03	\$4,690.41	\$11,731.44	\$256,697.49	\$250,831.77	\$20,234.60	\$276,932.08	0.267	\$74,026.24
	18	68	\$113,111.41	\$7,352.24	\$4,897.72	\$12,249.97	\$289,182.05	\$283,057.07	\$22,834.21	\$312,016.26	0.247	\$77,176.40
	19	69	\$118,110.93	\$7,677.21	\$5,114.20	\$12,791.41	\$324,807.68	\$318,411.97	\$25,686.29	\$350,493.97	0.229	\$80,220.00
	20	70	\$123,331.44	\$8,016.54	\$5,340.25	\$13,356.79	\$363,850.77	\$357,172.37	\$28,813.10	\$392,663.86	0.212	\$83,160.66
	21	71	\$128,782.69	\$8,370.87	\$5,576.29	\$13,947.16	\$406,611.03	\$399,637.44	\$32,238.75	\$438,849.78	0.196	\$86,001.83
	22	72	\$134,474.88	\$8,740.87	\$5,822.76	\$14,563.63	\$453,413.41	\$446,131.59	\$35,989.44	\$489,402.84	0.181	\$88,746.89
	23	73	\$140,418.67	\$9,127.21	\$6,080.13	\$15,207.34	\$504,610.19	\$497,006.52	\$40,093.52	\$544,703.70	0.168	\$91,399.08
	24	74	\$146,625.18	\$9,530.64	\$6,348.87	\$15,879.51	\$560,583.21	\$552,643.46	\$44,581.75	\$605,164.96	0.155	\$93,961.54
	25	75	\$153,106.01	\$9,951.89	\$6,629.49	\$16,581.38	\$621,746.34	\$613,455.65	\$49,487.47	\$671,233.80	0.144	\$96,437.30
	26	76	\$159,873.29	\$10,391.76	\$6,922.51	\$17,314.28	\$688,548.08	\$679,890.94	\$54,846.80	\$743,394.88	0.133	\$98,829.28
	27	77	\$166,939.69	\$10,851.08	\$7,228.49	\$18,079.57	\$761,474.45	\$752,434.67	\$60,698.90	\$822,173.36	0.123	\$101,140.32
	28	78	\$174,318.43	\$11,330.70	\$7,547.99	\$18,878.69	\$841,052.04	\$831,612.70	\$67,086.20	\$908,138.24	0.114	\$103,373.14
	29	79	\$182,023.30	\$11,831.51	\$7,881.61	\$19,713.12	\$927,851.36	\$917,994.80	\$74,054.64	\$1,001,906.00	0.105	\$105,530.40
	30	80	\$190,068.73	\$12,354.47	\$8,229.98	\$20,584.44	\$1,022,490.45	\$1,012,198.23	\$81,654.03	\$1,104,144.48	0.097	\$107,614.64
	31	81	\$198,469.77	\$12,900.54	\$8,593.74	\$21,494.28	\$1,125,638.75	\$1,114,891.62	\$89,938.31	\$1,215,577.06	0.090	\$109,628.33
	32	82	\$207,242.13	\$13,470.74	\$8,973.58	\$22,444.32	\$1,238,021.38	\$1,226,799.22	\$98,965.89	\$1,336,987.28	0.083	\$111,573.85
	33	83	\$216,402.24	\$14,066.15	\$9,370.22	\$23,436.36	\$1,360,423.64	\$1,348,705.46	\$108,000.07	\$1,469,223.71	0.077	\$113,453.51
	34	84	\$225,967.22	\$14,687.87	\$9,784.38	\$24,472.25	\$1,493,695.96	\$1,481,459.83	\$119,509.36	\$1,613,205.32	0.071	\$115,269.52
	35	85	\$235,954.97	\$15,337.07	\$10,216.85	\$25,553.92	\$1,638,769.25	\$1,625,982.29	\$131,167.99	\$1,769,927.24	0.066	\$117,024.05
	36	86	\$246,384.18	\$16,014.97	\$10,668.43	\$26,683.41	\$1,796,610.64	\$1,783,268.94	\$143,856.31	\$1,940,466.95	0.061	\$118,719.16

Table 9.15 Present Value of Payments for O-6

37	87	\$257,274.36	\$16,722.83	\$11,139.98	\$27,882.81	\$1,968,329.76	\$1,954,398.36	\$157,661.32	\$2,125,991.08	0.057	\$120,356.86
38	88	\$268,645.88	\$17,461.98	\$11,632.37	\$29,094.35	\$2,155,085.43	\$2,140,538.25	\$172,677.22	\$2,327,762.65	0.052	\$121,939.09
39	89	\$280,520.03	\$18,233.80	\$12,146.52	\$30,380.32	\$2,358,142.97	\$2,342,952.81	\$189,006.00	\$2,547,148.97	0.048	\$123,467.72
40	90	\$292,919.02	\$19,039.74	\$12,683.39	\$31,723.13	\$2,578,872.10	\$2,563,010.54	\$206,758.06	\$2,785,630.16	0.045	\$124,944.57
41	91	\$305,866.04	\$19,881.29	\$13,244.00	\$33,125.29	\$2,818,755.45	\$2,802,192.81	\$226,052.89	\$3,044,808.35	0.042	\$126,371.39
42	92	\$319,385.32	\$20,760.05	\$13,829.38	\$34,589.43	\$3,079,397.78	\$3,062,103.06	\$247,019.85	\$3,326,417.63	0.038	\$127,749.85
43	93	\$333,502.15	\$21,677.64	\$14,440.64	\$36,118.28	\$3,362,535.91	\$3,344,476.77	\$269,798.94	\$3,632,334.85	0.036	\$129,081.61
44	94	\$348,242.94	\$22,635.79	\$15,078.92	\$37,714.71	\$3,670,049.56	\$3,651,192.21	\$294,541.68	\$3,964,591.24	0.033	\$130,368.22
45	95	\$363,635.28	\$23,636.29	\$15,745.41	\$39,381.70	\$4,003,972.94	\$3,984,282.09	\$321,412.04	\$4,325,384.98	0.030	\$131,611.23
46	96	\$379,707.96	\$24,681.02	\$16,441.35	\$41,122.37	\$4,366,507.35	\$4,345,946.16	\$350,587.48	\$4,717,094.83	0.028	\$132,812.10
47	97	\$396,491.05	\$25,771.92	\$17,168.06	\$42,939.98	\$4,760,034.81	\$4,738,564.82	\$382,260.02	\$5,142,294.83	0.026	\$133,972.25
48	98	\$414,015.96	\$26,911.04	\$17,926.89	\$44,837.93	\$5,187,132.76	\$5,164,713.79	\$416,637.46	\$5,603,770.22	0.024	\$135,093.06
49	99	\$432,315.46	\$28,100.51	\$18,719.26	\$46,819.76	\$5,650,589.98	\$5,627,180.10	\$453,944.62	\$6,104,534.60	0.022	\$136,175.86
50	100	\$451,423.81	\$29,342.55	\$19,545.65	\$48,889.20	\$6,153,423.80	\$6,128,979.20	\$494,424.75	\$6,647,848.55	0.021	\$137,221.94
51	101	\$471,376.74	\$30,639.49	\$20,410.61	\$51,050.10	\$6,698,898.65	\$6,673,373.60	\$538,341.05	\$7,237,239.70	0.019	\$138,232.52
52	102	\$492,211.59	\$31,993.75	\$21,312.76	\$53,306.52	\$7,290,546.22	\$7,263,892.96	\$585,978.25	\$7,876,524.46	0.018	\$139,208.82
53	103	\$513,967.34	\$33,407.88	\$22,254.79	\$55,662.66	\$7,932,187.13	\$7,904,355.79	\$637,644.38	\$8,569,831.51	0.016	\$140,151.99
54	104	\$536,684.70	\$34,884.51	\$23,238.45	\$58,122.95	\$8,627,954.46	\$8,598,892.98	\$693,672.70	\$9,321,627.16	0.015	\$141,063.14
55	105	\$560,406.16	\$36,426.40	\$24,265.59	\$60,691.99	\$9,382,319.14	\$9,351,973.15	\$754,423.67	\$10,136,742.82	0.014	\$141,943.37
56	106	\$585,176.11	\$38,036.45	\$25,338.13	\$63,374.57	\$10,200,117.39	\$10,168,430.11	\$820,287.26	\$11,020,404.65	0.013	\$142,793.70
57	107	\$611,040.90	\$39,717.66	\$26,458.07	\$66,175.73	\$11,086,580.38	\$11,053,492.51	\$891,685.24	\$11,978,265.62	0.012	\$143,615.17
58	108	\$638,048.91	\$41,473.18	\$27,627.52	\$69,100.70	\$12,047,366.32	\$12,012,815.97	\$969,073.86	\$13,016,440.18	0.011	\$144,408.73
59	109	\$666,250.67	\$43,306.29	\$28,848.65	\$72,154.95	\$13,088,595.13	\$13,052,517.65	\$1,052,946.60	\$14,141,541.73	0.010	\$145,175.33
60	110	\$695,698.95	\$45,220.43	\$30,123.76	\$75,344.20	\$14,216,885.92	\$14,179,213.82	\$1,143,837.18	\$15,360,723.10	0.009	\$145,915.88

Table 9.15 Present Value of Payments for O-6

Retiree Age at Death (Table 4)	Spouse Age at Retiree Death (Table 5)	Spouse Age at Death (Table 4, using setback)	Value of Retiree's Retirement Pay at Time of Death	Spouse receives 55% Up to Age 62, 35 % Age 62 or Older	Present Value Factor	Present Value	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
81	76	89					
	76		\$198,469.77	\$69,464.42	0.090	\$6,264.74	\$6,264.74
	77		\$207,242.13	\$72,534.75	0.083	\$6,053.15	\$12,317.88
	78		\$216,402.24	\$75,740.78	0.077	\$5,848.71	\$18,166.59
	79		\$225,967.21	\$79,088.53	0.071	\$5,651.17	\$23,817.76
	80		\$235,954.97	\$82,584.24	0.066	\$5,460.30	\$29,278.06
	81		\$246,384.18	\$86,234.46	0.061	\$5,275.89	\$34,553.95
	82		\$257,274.36	\$90,046.02	0.057	\$5,097.70	\$39,651.64
	83		\$268,645.88	\$94,026.06	0.052	\$4,925.52	\$44,577.17
	84		\$280,520.03	\$98,182.01	0.048	\$4,759.17	\$49,336.34
	85		\$292,919.02	\$102,521.66	0.045	\$4,598.43	\$53,934.77
	86		\$305,866.04	\$107,053.11	0.042	\$4,443.12	\$58,377.89
	87		\$319,385.32	\$111,784.86	0.038	\$4,293.06	\$62,670.94
	88		\$333,502.15	\$116,725.75	0.036	\$4,148.06	\$66,819.00

Table 9.16 Present Value of Benefits for O-6

Average Retirement Age/Number of Years Service	End of Year	Age at End of Year	Yearly Retired Pay	Retiree Cost (6.5% x column 4)	Govt. Cost (4.33% x column 4)	Each Year's Total Contribution	Aggregate Contribution	Average Aggregate Contribution	Return Based on Rate of Return (Table 8)	End of Year Aggregate Value of Contributions	Present Value Factor	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age 53									8.067%			
30 Years												
1	54	\$68,577.30	\$4,457.52	\$2,969.40	\$7,426.92	\$7,426.92	\$7,426.92	\$3,713.46	\$299.56	\$7,726.49	0.925	\$7,149.52
2	55	\$71,608.42	\$4,654.55	\$3,100.64	\$7,755.19	\$7,755.19	\$15,481.68	\$11,604.08	\$936.10	\$16,417.78	0.856	\$14,057.37
3	56	\$74,773.51	\$4,860.28	\$3,237.69	\$8,097.97	\$8,097.97	\$24,515.75	\$20,466.76	\$1,651.05	\$26,166.80	0.792	\$20,731.72
4	57	\$78,078.50	\$5,075.10	\$3,380.80	\$8,455.90	\$8,455.90	\$34,622.71	\$30,394.75	\$2,451.94	\$37,074.65	0.733	\$27,180.44
5	58	\$81,529.57	\$5,299.42	\$3,530.23	\$8,829.65	\$8,829.65	\$45,904.30	\$41,489.48	\$3,346.96	\$49,251.26	0.678	\$33,411.16
6	59	\$85,133.17	\$5,633.66	\$3,686.27	\$9,219.92	\$9,219.92	\$58,471.18	\$53,861.22	\$4,344.98	\$62,816.17	0.628	\$39,431.25
7	60	\$88,896.06	\$5,778.24	\$3,849.20	\$9,627.44	\$9,627.44	\$72,443.61	\$67,629.89	\$5,455.70	\$77,899.31	0.581	\$45,247.72
8	61	\$92,825.27	\$6,033.64	\$4,019.33	\$10,052.98	\$10,052.98	\$87,952.29	\$82,925.80	\$6,689.62	\$94,641.91	0.537	\$50,867.81
9	62	\$96,928.14	\$6,300.33	\$4,196.99	\$10,497.32	\$10,497.32	\$105,139.23	\$99,890.57	\$8,058.17	\$113,197.40	0.497	\$56,297.63
10	63	\$101,212.37	\$6,578.80	\$4,382.50	\$10,961.30	\$10,961.30	\$124,158.70	\$118,678.05	\$9,573.76	\$133,732.46	0.460	\$61,543.94
11	64	\$105,685.95	\$6,869.59	\$4,576.20	\$11,445.79	\$11,445.79	\$145,178.25	\$139,455.36	\$11,249.86	\$155,428.11	0.426	\$66,612.87
12	65	\$110,357.27	\$7,173.22	\$4,778.47	\$11,951.69	\$11,951.69	\$168,379.81	\$162,403.96	\$13,101.13	\$181,480.93	0.394	\$71,510.40
13	66	\$115,235.06	\$7,490.28	\$4,989.68	\$12,479.96	\$12,479.96	\$193,960.89	\$187,720.91	\$15,143.45	\$209,104.34	0.365	\$76,242.31
14	67	\$120,328.45	\$7,821.35	\$5,210.22	\$13,031.57	\$13,031.57	\$222,135.91	\$215,620.12	\$17,394.08	\$239,529.98	0.337	\$80,814.22
15	68	\$125,646.97	\$8,167.05	\$5,440.51	\$13,607.57	\$13,607.57	\$253,137.55	\$246,333.77	\$19,871.75	\$273,009.30	0.312	\$85,231.51
16	69	\$131,200.57	\$8,528.04	\$5,680.98	\$14,209.02	\$14,209.02	\$287,218.32	\$280,113.81	\$22,596.78	\$309,815.10	0.289	\$89,499.41
17	70	\$136,999.63	\$8,904.98	\$5,932.08	\$14,837.06	\$14,837.06	\$324,652.16	\$317,233.63	\$25,591.24	\$350,243.40	0.267	\$93,622.96
18	71	\$143,055.02	\$9,298.58	\$6,194.28	\$15,492.86	\$15,492.86	\$365,736.25	\$357,989.82	\$28,879.04	\$394,615.29	0.247	\$97,877.95
19	72	\$149,378.05	\$9,709.57	\$6,468.07	\$16,177.64	\$16,177.64	\$410,792.94	\$402,704.11	\$32,486.14	\$443,279.08	0.229	\$101,456.38
20	73	\$155,980.56	\$10,138.74	\$6,753.96	\$16,892.69	\$16,892.69	\$460,171.77	\$451,725.42	\$36,440.69	\$496,612.46	0.212	\$105,175.50
21	74	\$162,874.90	\$10,586.87	\$7,052.48	\$17,639.35	\$17,639.35	\$514,251.81	\$505,432.14	\$40,773.21	\$555,025.02	0.196	\$108,768.81
22	75	\$170,073.97	\$11,054.81	\$7,364.20	\$18,419.01	\$18,419.01	\$573,444.03	\$564,234.53	\$45,516.80	\$618,960.83	0.181	\$112,240.56
23	76	\$177,591.24	\$11,543.43	\$7,689.70	\$19,233.13	\$19,233.13	\$638,193.96	\$628,577.40	\$50,707.34	\$688,901.30	0.168	\$115,594.86
24	77	\$185,440.77	\$12,053.65	\$8,029.59	\$20,083.24	\$20,083.24	\$708,984.54	\$698,942.92	\$56,383.73	\$765,368.26	0.155	\$118,835.67
25	78	\$193,637.25	\$12,586.42	\$8,384.49	\$20,970.91	\$20,970.91	\$786,339.18	\$775,853.72	\$62,588.12	\$848,927.30	0.144	\$121,966.82
26	79	\$202,196.02	\$13,142.74	\$8,755.09	\$21,897.93	\$21,897.93	\$870,825.13	\$859,876.21	\$69,366.21	\$940,191.34	0.133	\$124,992.03
27	80	\$211,133.08	\$13,723.65	\$9,142.06	\$22,865.71	\$22,865.71	\$963,057.06	\$951,624.20	\$76,767.52	\$1,039,824.58	0.123	\$127,914.86
28	81	\$220,465.17	\$14,330.24	\$9,546.14	\$23,876.38	\$23,876.38	\$1,063,700.96	\$1,051,762.77	\$84,845.70	\$1,148,546.66	0.114	\$130,738.77
29	82	\$230,209.73	\$14,963.63	\$9,968.08	\$24,931.71	\$24,931.71	\$1,173,478.37	\$1,161,012.52	\$93,658.88	\$1,267,137.25	0.105	\$133,467.11
30	83	\$240,385.00	\$15,625.02	\$10,408.67	\$26,033.70	\$26,033.70	\$1,293,170.95	\$1,280,154.10	\$103,270.03	\$1,396,440.98	0.097	\$136,103.11
31	84	\$251,010.01	\$16,315.65	\$10,868.73	\$27,184.38	\$27,184.38	\$1,423,625.36	\$1,410,033.17	\$113,747.38	\$1,537,372.74	0.090	\$138,649.87
32	85	\$262,104.66	\$17,036.80	\$11,349.13	\$28,385.93	\$28,385.93	\$1,565,758.67	\$1,551,565.71	\$125,162.81	\$1,690,923.48	0.083	\$141,110.43
33	86	\$273,689.68	\$17,789.83	\$11,850.76	\$29,640.59	\$29,640.59	\$1,720,564.07	\$1,705,743.78	\$137,602.35	\$1,858,166.42	0.077	\$143,487.68
34	87	\$285,786.77	\$18,576.14	\$12,374.57	\$30,950.71	\$30,950.71	\$1,889,117.13	\$1,873,641.78	\$151,146.68	\$2,040,263.81	0.071	\$145,784.44
35	88	\$298,418.54	\$19,397.21	\$12,921.52	\$32,318.73	\$32,318.73	\$2,072,582.54	\$2,056,423.18	\$165,891.66	\$2,238,474.20	0.066	\$148,003.43
36	89	\$311,608.64	\$20,254.56	\$13,492.65	\$33,747.22	\$33,747.22	\$2,272,221.41	\$2,255,347.81	\$181,938.91	\$2,454,160.32	0.061	\$150,147.28

Table 9.17 Present Value of Payments for O-7

37	90	\$325,381.74	\$21,149.81	\$14,089.03	\$35,238.84	\$2,489,399.16	\$2,471,779.74	\$199,398.47	\$2,688,797.64	0.057	\$152,218.53
38	91	\$339,763.62	\$22,084.64	\$14,711.76	\$36,796.40	\$2,725,594.03	\$2,707,195.84	\$218,389.49	\$2,943,983.52	0.052	\$154,219.62
39	92	\$354,781.17	\$23,060.78	\$15,362.02	\$38,422.80	\$2,982,406.32	\$2,963,194.92	\$239,040.93	\$3,221,447.26	0.048	\$156,152.92
40	93	\$370,462.50	\$24,080.06	\$16,041.03	\$40,121.09	\$3,261,568.35	\$3,241,507.80	\$261,492.43	\$3,523,060.73	0.045	\$158,020.73
41	94	\$386,836.94	\$25,144.40	\$16,750.04	\$41,894.44	\$3,564,955.22	\$3,544,008.00	\$285,895.13	\$3,850,950.35	0.042	\$159,825.26
42	95	\$403,935.13	\$26,255.78	\$17,490.39	\$43,746.17	\$3,894,596.52	\$3,872,723.43	\$312,412.60	\$4,207,009.12	0.038	\$161,568.65
43	96	\$421,789.06	\$27,416.29	\$18,263.47	\$45,679.76	\$4,252,688.88	\$4,229,849.00	\$341,221.92	\$4,593,910.79	0.036	\$163,252.95
44	97	\$440,432.14	\$28,628.09	\$19,070.71	\$47,698.80	\$4,641,609.60	\$4,617,060.20	\$372,514.71	\$5,014,124.31	0.033	\$164,880.17
45	98	\$459,899.24	\$29,893.45	\$19,913.64	\$49,807.09	\$5,063,931.40	\$5,039,027.85	\$406,498.38	\$5,470,429.78	0.030	\$166,452.24
46	99	\$480,226.79	\$31,214.74	\$20,793.82	\$52,008.56	\$5,522,438.34	\$5,496,434.06	\$443,397.34	\$5,965,835.67	0.028	\$167,971.00
47	100	\$501,452.81	\$32,594.43	\$21,712.91	\$54,307.34	\$6,020,143.01	\$5,992,989.34	\$483,454.45	\$6,503,597.46	0.026	\$169,438.28
48	101	\$523,617.03	\$34,035.11	\$22,672.62	\$56,707.72	\$6,560,305.19	\$6,531,951.32	\$526,932.51	\$7,087,237.70	0.024	\$170,855.80
49	102	\$546,760.90	\$35,539.46	\$23,674.75	\$59,214.21	\$7,146,451.90	\$7,116,844.80	\$574,115.87	\$7,720,567.77	0.022	\$172,225.25
50	103	\$570,927.73	\$37,110.30	\$24,721.17	\$61,831.47	\$7,762,399.25	\$7,751,483.51	\$625,312.17	\$8,407,711.42	0.021	\$173,548.24
51	104	\$596,162.74	\$38,760.58	\$25,873.85	\$64,564.42	\$8,427,575.85	\$8,439,993.63	\$680,852.29	\$9,153,130.13	0.019	\$174,826.36
52	105	\$622,513.13	\$40,463.35	\$26,954.82	\$67,418.17	\$9,220,548.30	\$9,186,839.22	\$741,102.32	\$9,961,650.62	0.018	\$176,061.11
53	106	\$650,028.21	\$42,251.83	\$28,146.22	\$70,398.05	\$10,032,048.68	\$9,996,849.65	\$806,445.86	\$10,838,494.54	0.016	\$177,253.96
54	107	\$678,759.46	\$44,119.36	\$29,390.28	\$73,509.65	\$10,912,004.19	\$10,875,249.37	\$877,306.37	\$11,789,310.56	0.015	\$178,406.32
55	108	\$708,760.62	\$46,069.44	\$30,689.33	\$76,758.78	\$11,866,069.33	\$11,827,689.94	\$954,139.75	\$12,820,209.08	0.014	\$179,519.56
56	109	\$740,087.84	\$48,105.71	\$32,045.80	\$80,151.51	\$12,900,360.59	\$12,860,284.84	\$1,037,439.18	\$13,937,799.77	0.013	\$180,595.01
57	110	\$772,799.73	\$50,231.98	\$33,462.23	\$83,694.21	\$14,021,493.98	\$13,979,646.88	\$1,127,738.11	\$15,149,232.09	0.012	\$181,633.93
58	111	\$806,957.47	\$52,452.24	\$34,941.26	\$87,393.49	\$15,236,625.59	\$15,192,928.84	\$1,225,613.57	\$16,462,239.16	0.011	\$182,637.57
59	112	\$842,624.99	\$54,770.62	\$36,485.66	\$91,256.29	\$16,553,495.44	\$16,507,867.30	\$1,331,689.66	\$17,885,185.10	0.010	\$183,547.71
60	113	\$879,869.02	\$57,191.49	\$38,098.33	\$95,289.81	\$17,980,474.91	\$17,932,830.01	\$1,446,641.40	\$19,427,163.31	0.009	\$184,503.71

Retiree Age at Death (Table 4)	Spouse Age at Retiree Death (Table 5)	Spouse Age at Death (Table 4, using setback)	Value of Retiree's Retirement Pay at Time of Death	Spouse receives 55% Up to Age 62, 35 % Age 62 or Older	Present Value Factor	Present Value	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
81	76	89					
	76		\$220,465.17	\$77,162.81	0.114	\$8,783.42	\$8,783.42
	77		\$230,209.73	\$80,573.41	0.105	\$8,486.77	\$17,270.19
	78		\$240,385.00	\$84,134.75	0.097	\$8,200.13	\$25,470.32
	79		\$251,010.02	\$87,853.51	0.090	\$7,923.18	\$33,393.50
	80		\$262,104.66	\$91,736.63	0.083	\$7,655.58	\$41,049.08
	81		\$273,689.69	\$95,791.39	0.077	\$7,397.01	\$48,446.09
	82		\$285,786.77	\$100,025.37	0.071	\$7,147.18	\$55,593.28
	83		\$298,418.55	\$104,446.49	0.066	\$6,905.79	\$62,499.07
	84		\$311,608.65	\$109,063.03	0.061	\$6,672.55	\$69,171.62
	85		\$325,381.75	\$113,883.61	0.057	\$6,447.19	\$75,618.82
	86		\$339,763.62	\$118,917.27	0.052	\$6,229.44	\$81,848.26
	87		\$354,781.17	\$124,173.41	0.048	\$6,019.05	\$87,867.31
	88		\$370,462.50	\$129,661.88	0.045	\$5,815.76	\$93,683.06

Table 9.18 Present Value of Benefits for O-7

Average Retirement Age/Number of Years of Service	End of Year	Age at End of Year	Yearly Retired Pay	Retiree Cost (6.5% x column 4)	Govt. Cost (4.33% x column 4)	Each Year's Total Contribution	Aggregate Contribution	Average Aggregate Contribution	Return Based on Rate of Return (Table 8)	End of Year Aggregate Value of Contributions	Present Value Factor	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age 55												
32 Years									8.067%			
	1	56	\$82,883.52	\$5,387.43	\$3,588.86	\$8,976.29	\$8,976.29	\$4,488.14	\$362.06	\$9,338.34	0.925	\$8,641.01
	2	57	\$86,546.97	\$5,625.55	\$3,747.48	\$9,373.04	\$18,711.38	\$14,024.86	\$1,131.39	\$19,842.77	0.856	\$16,989.94
	3	58	\$90,372.35	\$5,874.20	\$3,913.12	\$9,787.33	\$29,630.09	\$24,736.43	\$1,995.49	\$31,625.58	0.792	\$25,056.65
	4	59	\$94,366.81	\$6,133.84	\$4,086.08	\$10,219.93	\$41,845.50	\$36,735.54	\$2,963.46	\$44,808.96	0.733	\$32,850.67
	5	60	\$98,537.82	\$6,404.96	\$4,266.69	\$10,671.65	\$55,480.61	\$50,144.78	\$4,045.18	\$59,525.79	0.678	\$40,381.21
	6	61	\$102,893.19	\$6,688.06	\$4,455.28	\$11,143.33	\$70,669.12	\$65,097.45	\$5,251.41	\$75,920.53	0.628	\$47,657.18
	7	62	\$107,441.07	\$6,983.67	\$4,652.20	\$11,635.87	\$87,556.40	\$81,738.46	\$6,593.84	\$94,150.24	0.581	\$54,687.16
	8	63	\$112,189.96	\$7,292.35	\$4,857.83	\$12,150.17	\$106,300.41	\$100,225.33	\$8,085.18	\$114,385.59	0.537	\$61,479.47
	9	64	\$117,148.76	\$7,614.67	\$5,072.54	\$12,687.21	\$127,072.80	\$120,729.20	\$9,739.22	\$136,812.02	0.497	\$68,042.13
	10	65	\$122,326.74	\$7,951.24	\$5,296.75	\$13,247.99	\$150,080.01	\$143,436.02	\$11,570.98	\$161,630.99	0.460	\$74,382.90
	11	66	\$127,733.58	\$8,302.68	\$5,530.86	\$13,833.55	\$175,484.54	\$168,547.77	\$13,596.75	\$189,061.29	0.426	\$80,509.28
	12	67	\$133,379.40	\$8,669.66	\$5,775.33	\$14,444.99	\$203,506.28	\$196,283.78	\$15,834.21	\$219,340.49	0.394	\$86,428.50
	13	68	\$139,274.77	\$9,052.86	\$6,030.60	\$15,083.46	\$234,423.95	\$226,882.22	\$18,302.59	\$252,726.54	0.365	\$92,147.57
	14	69	\$145,430.72	\$9,453.00	\$6,297.15	\$15,750.15	\$268,476.68	\$260,601.61	\$21,022.73	\$289,499.42	0.337	\$97,673.23
	15	70	\$151,858.75	\$9,870.82	\$6,575.48	\$16,446.30	\$305,945.72	\$297,722.57	\$24,017.28	\$329,963.00	0.312	\$103,012.04
	16	71	\$158,570.91	\$10,307.11	\$6,866.12	\$17,173.23	\$347,136.23	\$338,549.61	\$27,310.80	\$374,447.02	0.289	\$108,170.28
	17	72	\$165,579.74	\$10,762.68	\$7,169.60	\$17,932.29	\$392,379.31	\$383,413.17	\$30,929.94	\$423,309.25	0.267	\$113,154.07
	18	73	\$172,898.37	\$11,238.39	\$7,486.50	\$18,724.89	\$442,034.14	\$432,671.70	\$34,903.63	\$476,937.77	0.247	\$117,969.30
	19	74	\$180,540.48	\$11,735.13	\$7,817.40	\$19,552.53	\$496,490.30	\$486,714.04	\$39,263.22	\$535,753.53	0.229	\$122,927.83
	20	75	\$188,520.37	\$12,253.82	\$8,162.93	\$20,416.76	\$556,170.28	\$545,961.90	\$44,042.75	\$600,213.03	0.212	\$127,116.64
	21	76	\$196,852.97	\$12,795.44	\$8,523.73	\$21,319.18	\$621,532.20	\$610,872.62	\$49,279.09	\$670,811.30	0.196	\$131,459.56
	22	77	\$205,553.87	\$13,361.00	\$8,900.48	\$22,261.48	\$693,072.78	\$681,942.04	\$55,012.26	\$748,085.05	0.181	\$135,655.57
	23	78	\$214,639.35	\$13,951.56	\$9,293.88	\$23,245.44	\$771,330.49	\$759,707.77	\$61,285.63	\$832,616.11	0.168	\$139,709.63
	24	79	\$224,126.41	\$14,568.22	\$9,704.67	\$24,272.89	\$856,899.00	\$844,752.56	\$68,146.19	\$925,035.19	0.155	\$143,626.51
	25	80	\$234,032.80	\$15,212.13	\$10,133.62	\$25,345.75	\$950,380.94	\$937,708.07	\$75,644.91	\$1,026,025.85	0.144	\$147,410.87
	26	81	\$244,377.04	\$15,884.51	\$10,581.53	\$26,466.03	\$1,052,491.89	\$1,039,258.87	\$83,837.01	\$1,136,328.90	0.133	\$151,067.18
	27	82	\$255,178.51	\$16,586.60	\$11,049.23	\$27,635.83	\$1,163,964.73	\$1,150,146.82	\$92,782.34	\$1,256,747.08	0.123	\$154,599.75
	28	83	\$266,457.40	\$17,319.73	\$11,537.61	\$28,857.34	\$1,285,604.41	\$1,271,175.75	\$102,545.75	\$1,388,150.16	0.114	\$158,012.78
	29	84	\$278,234.82	\$18,085.26	\$12,047.57	\$30,132.83	\$1,418,282.99	\$1,403,216.58	\$113,197.48	\$1,531,480.47	0.105	\$161,310.29
	30	85	\$290,532.80	\$18,884.63	\$12,580.07	\$31,464.70	\$1,562,945.17	\$1,547,212.82	\$124,813.66	\$1,687,758.83	0.097	\$164,496.19
	31	86	\$303,374.35	\$19,719.33	\$13,136.11	\$32,855.44	\$1,720,614.27	\$1,704,186.55	\$137,476.73	\$1,858,091.00	0.090	\$167,574.25
	32	87	\$316,783.49	\$20,590.93	\$13,716.73	\$34,307.65	\$1,892,398.66	\$1,875,244.83	\$151,276.00	\$2,043,674.66	0.083	\$170,548.11
	33	88	\$330,785.32	\$21,501.05	\$14,323.00	\$35,824.05	\$2,079,498.71	\$2,061,586.68	\$166,308.20	\$2,245,806.90	0.077	\$173,421.29
	34	89	\$345,406.03	\$22,451.39	\$14,956.08	\$37,407.47	\$2,283,214.38	\$2,264,510.64	\$182,678.07	\$2,465,892.45	0.071	\$176,197.19
	35	90	\$360,672.98	\$23,443.74	\$15,617.14	\$39,060.88	\$2,504,953.34	\$2,485,422.89	\$200,499.06	\$2,705,452.40	0.066	\$178,879.10
	36	91	\$376,614.73	\$24,479.96	\$16,307.42	\$40,787.37	\$2,746,239.78	\$2,725,846.09	\$219,894.00	\$2,966,133.78	0.061	\$181,470.18

Table 9.19 Present Value of Payments for O-8

37	92	\$393,261.10	\$25,561.97	\$17,028.21	\$42,590.18	\$3,008,723.96	\$2,987,428.87	\$240,995.89	\$3,249,719.84	0.057	\$183,973.52
38	93	\$410,643.24	\$26,691.81	\$17,780.85	\$44,438.66	\$3,294,192.51	\$3,271,956.17	\$263,948.70	\$3,558,141.21	0.052	\$186,392.07
39	94	\$428,793.67	\$27,871.59	\$18,566.77	\$46,438.35	\$3,604,579.56	\$3,581,360.39	\$288,908.34	\$3,893,487.91	0.048	\$188,728.69
40	95	\$447,746.35	\$29,103.51	\$19,387.42	\$48,490.93	\$3,941,978.84	\$3,917,733.37	\$316,043.55	\$4,258,022.39	0.045	\$190,986.15
41	96	\$467,536.74	\$30,369.89	\$20,244.34	\$50,634.23	\$4,308,656.62	\$4,283,339.50	\$345,537.00	\$4,654,193.61	0.042	\$193,167.13
42	97	\$488,201.86	\$31,733.12	\$21,139.14	\$52,872.26	\$4,707,065.88	\$4,680,629.74	\$377,586.40	\$5,084,652.28	0.038	\$195,274.21
43	98	\$509,780.38	\$33,135.72	\$22,073.49	\$55,209.22	\$5,139,861.49	\$5,112,256.88	\$412,405.76	\$5,552,267.26	0.036	\$197,309.89
44	99	\$532,312.68	\$34,600.32	\$23,049.14	\$57,649.46	\$5,609,916.72	\$5,581,091.99	\$450,226.69	\$6,060,143.41	0.033	\$199,276.57
45	100	\$555,840.90	\$36,129.66	\$24,067.91	\$60,197.57	\$6,120,340.98	\$6,090,242.19	\$491,299.84	\$6,611,640.82	0.030	\$201,176.59
46	101	\$580,409.06	\$37,726.59	\$25,131.71	\$62,858.30	\$6,674,499.12	\$6,643,069.97	\$535,896.45	\$7,210,395.57	0.028	\$203,012.19
47	102	\$606,063.15	\$39,394.10	\$26,242.53	\$65,636.64	\$7,276,032.21	\$7,243,213.89	\$584,310.06	\$7,860,342.27	0.026	\$204,785.56
48	103	\$632,851.14	\$41,135.32	\$27,402.45	\$68,537.78	\$7,928,880.05	\$7,894,611.16	\$636,858.28	\$8,565,738.34	0.024	\$206,498.80
49	104	\$660,823.16	\$42,953.51	\$28,613.64	\$71,567.15	\$8,637,305.48	\$8,601,521.91	\$693,884.77	\$9,331,190.26	0.022	\$208,153.93
50	105	\$690,031.54	\$44,852.05	\$29,878.37	\$74,730.42	\$9,405,920.67	\$9,368,555.46	\$755,761.37	\$10,161,682.04	0.021	\$209,752.93
51	106	\$720,530.93	\$46,834.51	\$31,198.99	\$78,033.50	\$10,239,715.54	\$10,200,698.79	\$822,890.37	\$11,062,605.91	0.019	\$211,297.67
52	107	\$752,378.40	\$48,904.60	\$32,577.98	\$81,482.58	\$11,144,088.49	\$11,103,347.20	\$895,707.02	\$12,039,795.51	0.018	\$212,790.01
53	108	\$785,633.53	\$51,066.18	\$34,017.93	\$85,084.11	\$12,124,879.62	\$12,082,337.57	\$974,682.17	\$13,099,561.79	0.016	\$214,231.70
54	109	\$820,358.53	\$53,323.30	\$35,521.52	\$88,844.83	\$13,188,406.62	\$13,143,984.21	\$1,060,325.21	\$14,248,731.83	0.015	\$215,624.46
55	110	\$856,618.38	\$55,680.19	\$37,091.58	\$92,771.77	\$14,341,503.60	\$14,295,117.71	\$1,153,187.15	\$15,494,690.74	0.014	\$216,969.95
56	111	\$894,480.91	\$58,141.26	\$38,731.02	\$96,872.28	\$15,591,563.03	\$15,543,126.89	\$1,253,864.05	\$16,845,427.07	0.013	\$218,269.75
57	112	\$934,016.96	\$60,711.10	\$40,442.93	\$101,154.04	\$16,946,581.11	\$16,896,004.09	\$1,363,000.65	\$18,309,581.76	0.012	\$219,525.41
58	113	\$975,300.51	\$63,394.53	\$42,230.51	\$105,625.05	\$18,415,206.81	\$18,362,394.28	\$1,481,294.35	\$19,896,501.15	0.011	\$220,738.42
59	114	\$1,018,408.80	\$66,196.57	\$44,097.10	\$110,293.67	\$20,006,794.83	\$19,951,647.99	\$1,609,499.44	\$21,616,294.27	0.010	\$221,910.22
60	115	\$1,063,422.46	\$69,122.46	\$46,046.19	\$115,168.65	\$21,731,462.92	\$21,673,878.59	\$1,748,431.79	\$23,479,894.71	0.009	\$223,042.21

Table 9.19 Present Value of Payments for O-8

Retiree Age at Death (Table 4)	Spouse Age at Retiree Death (Table 5)	Spouse Age at Death (Table 4, using setback)	Value of Retiree's Retirement Pay at Time of Death	Spouse receives 55% Up to Age 62, 35 % Age 62 or Older	Present Value Factor	Present Value	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
81	76	89					
	76		\$244,377.04	\$85,531.96	0.133	\$11,370.89	\$11,370.89
	77		\$255,178.51	\$89,312.48	0.123	\$10,986.85	\$22,357.74
	78		\$266,457.40	\$93,260.09	0.114	\$10,615.77	\$32,973.51
	79		\$278,234.81	\$97,382.18	0.105	\$10,257.23	\$43,230.74
	80		\$290,532.79	\$101,686.48	0.097	\$9,910.80	\$53,141.54
	81		\$303,374.34	\$106,181.02	0.090	\$9,576.07	\$62,717.61
	82		\$316,783.49	\$110,874.22	0.083	\$9,252.64	\$71,970.25
	83		\$330,785.32	\$115,774.86	0.077	\$8,940.14	\$80,910.39
	84		\$345,406.03	\$120,892.11	0.071	\$8,638.19	\$89,548.58
	85		\$360,672.97	\$126,235.54	0.066	\$8,346.44	\$97,895.02
	86		\$376,614.72	\$131,815.15	0.061	\$8,064.55	\$105,959.56
	87		\$393,261.09	\$137,641.38	0.057	\$7,792.17	\$113,751.73
	88		\$410,643.23	\$143,725.13	0.052	\$7,528.99	\$121,280.73

Table 9.20 Present Value of Benefits for O-8

Average Retirement Age/Number of Years of Service	Age at End of Year	Yearly Retired Pay	Retiree Cost (6.5% x column 4)	Govt. Cost (4.33% x column 4)	Each Year's Total Contribution	Aggregate Contribution	Average Aggregate Contribution	Return Based on Rate of Return (Table 8)	End of Year Aggregate Value of Contributions	Present Value Factor	Aggregate Present Value	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age 57												
34 Years									8.067%			
	1	58	\$97,194.78	\$6,317.66	\$4,208.53	\$10,526.19	\$10,526.19	\$5,263.10	\$424.57	\$10,950.77	0.925	\$10,133.03
	2	59	\$101,490.79	\$6,596.90	\$4,394.55	\$10,991.45	\$21,942.22	\$16,446.49	\$1,326.74	\$23,268.96	0.856	\$19,923.55
	3	60	\$105,976.68	\$6,888.48	\$4,588.79	\$11,477.27	\$34,746.23	\$29,007.60	\$2,340.04	\$27,086.28	0.792	\$29,383.11
	4	61	\$110,660.85	\$7,192.96	\$4,791.61	\$11,984.57	\$49,070.85	\$43,078.56	\$3,475.15	\$25,546.00	0.733	\$38,522.90
	5	62	\$115,552.06	\$7,510.88	\$5,003.40	\$12,514.29	\$65,060.28	\$58,803.14	\$4,743.65	\$69,803.93	0.678	\$47,353.72
	6	63	\$120,659.46	\$7,842.87	\$5,224.55	\$13,067.42	\$82,871.35	\$76,337.64	\$6,158.16	\$89,029.51	0.628	\$55,886.01
	7	64	\$125,992.61	\$8,189.52	\$5,455.48	\$13,645.00	\$102,674.51	\$95,852.01	\$7,732.38	\$110,406.89	0.581	\$64,129.84
	8	65	\$131,561.48	\$8,551.50	\$5,696.61	\$14,248.11	\$124,655.00	\$117,530.95	\$9,481.22	\$134,136.22	0.537	\$72,094.95
	9	66	\$137,376.50	\$8,929.47	\$5,948.40	\$14,877.88	\$149,014.10	\$141,575.16	\$11,420.87	\$160,434.96	0.497	\$79,790.77
	10	67	\$143,448.54	\$9,324.16	\$6,211.32	\$15,535.48	\$175,970.44	\$168,202.70	\$13,568.91	\$189,539.35	0.460	\$87,226.39
	11	68	\$149,788.97	\$9,736.28	\$6,485.86	\$16,222.15	\$205,761.50	\$197,650.43	\$15,944.46	\$221,705.96	0.426	\$94,410.59
	12	69	\$156,409.64	\$10,166.63	\$6,772.54	\$16,939.16	\$238,645.12	\$230,175.54	\$18,568.26	\$257,213.38	0.394	\$101,351.87
	13	70	\$163,322.95	\$10,615.99	\$7,071.88	\$17,687.88	\$274,901.26	\$266,057.32	\$21,462.84	\$296,364.10	0.365	\$108,058.42
	14	71	\$170,541.82	\$11,085.22	\$7,384.46	\$18,469.68	\$314,832.78	\$305,598.94	\$24,652.67	\$339,486.45	0.337	\$114,538.19
	15	72	\$178,079.77	\$11,575.19	\$7,710.85	\$19,286.04	\$358,772.49	\$349,129.47	\$28,164.27	\$386,936.76	0.312	\$120,798.83
	16	73	\$185,950.90	\$12,086.81	\$8,051.67	\$20,138.48	\$407,075.25	\$397,006.00	\$32,026.47	\$439,101.72	0.289	\$126,847.73
	17	74	\$194,169.93	\$12,621.05	\$8,407.56	\$21,028.60	\$460,130.32	\$449,616.02	\$36,270.52	\$496,400.85	0.267	\$132,692.06
	18	75	\$202,752.24	\$13,178.90	\$8,779.17	\$21,958.07	\$518,358.91	\$507,379.88	\$40,930.33	\$559,289.25	0.247	\$138,338.72
	19	76	\$211,713.88	\$13,761.40	\$9,167.21	\$22,928.61	\$582,217.86	\$570,753.56	\$46,042.69	\$628,260.55	0.229	\$143,794.38
	20	77	\$221,071.64	\$14,369.66	\$9,572.40	\$23,942.06	\$652,202.61	\$640,231.58	\$51,647.48	\$703,850.09	0.212	\$149,065.50
	21	78	\$230,843.00	\$15,004.80	\$9,995.50	\$25,000.30	\$728,850.39	\$716,350.24	\$57,787.97	\$786,638.36	0.196	\$154,158.93
	22	79	\$241,046.27	\$15,668.01	\$10,437.30	\$26,105.31	\$812,743.67	\$799,691.02	\$64,511.07	\$877,254.75	0.181	\$159,078.83
	23	80	\$251,700.51	\$16,360.53	\$10,898.63	\$27,259.17	\$904,513.91	\$890,884.33	\$71,867.64	\$976,381.55	0.168	\$163,832.89
	24	81	\$262,825.67	\$17,083.67	\$11,380.35	\$28,464.02	\$1,004,845.57	\$990,613.56	\$79,912.80	\$1,084,758.37	0.155	\$168,426.09
	25	82	\$274,442.57	\$17,838.77	\$11,883.36	\$29,722.13	\$1,114,480.50	\$1,099,619.43	\$88,706.30	\$1,203,186.80	0.144	\$172,863.89
	26	83	\$286,572.93	\$18,627.24	\$12,408.61	\$31,035.85	\$1,234,222.65	\$1,218,704.72	\$98,312.91	\$1,332,535.56	0.133	\$177,151.51
	27	84	\$299,239.45	\$19,450.56	\$12,957.07	\$32,407.63	\$1,364,943.19	\$1,348,739.37	\$108,802.81	\$1,473,746.00	0.123	\$181,294.05
	28	85	\$312,465.84	\$20,310.28	\$13,529.77	\$33,840.05	\$1,507,586.05	\$1,490,666.02	\$120,252.03	\$1,627,838.07	0.114	\$185,296.39
	29	86	\$326,276.83	\$21,207.99	\$14,127.79	\$35,335.78	\$1,663,173.85	\$1,645,505.96	\$132,742.97	\$1,795,916.82	0.105	\$189,163.28
	30	87	\$340,698.26	\$22,145.39	\$14,752.23	\$36,897.62	\$1,832,814.44	\$1,814,365.63	\$146,364.88	\$1,979,179.32	0.097	\$192,899.26
	31	88	\$355,757.13	\$23,124.21	\$15,404.28	\$38,528.50	\$2,017,707.81	\$1,998,443.57	\$161,214.44	\$2,178,922.26	0.090	\$196,508.82
	32	89	\$371,481.59	\$24,146.30	\$16,085.15	\$40,231.46	\$2,219,153.71	\$2,199,037.98	\$177,396.39	\$2,396,550.11	0.083	\$199,996.16
	33	90	\$387,901.08	\$25,213.57	\$16,796.12	\$42,009.69	\$2,438,559.79	\$2,417,554.95	\$195,024.16	\$2,633,583.95	0.077	\$203,365.45
	34	91	\$405,046.30	\$26,328.01	\$17,538.50	\$43,866.51	\$2,677,450.47	\$2,655,517.21	\$214,220.57	\$2,891,671.04	0.071	\$206,620.66
	35	92	\$422,949.35	\$27,491.71	\$18,313.71	\$45,805.41	\$2,937,476.45	\$2,914,573.75	\$235,118.66	\$3,172,595.12	0.066	\$209,765.64
	36	93	\$441,643.71	\$28,706.84	\$19,123.17	\$47,830.01	\$3,220,425.13	\$3,196,510.12	\$257,862.47	\$3,478,287.60	0.061	\$212,804.12

Table 9.21 Present Value of Payments for O-9

37	94	\$461,164.36	\$29,975.68	\$19,968.42	\$49,944.10	\$3,528,231.70	\$3,503,259.65	\$282,607.96	\$3,810,839.66	0.057	\$215,739.70
38	95	\$481,547.83	\$31,300.61	\$20,851.02	\$52,151.63	\$3,862,991.29	\$3,836,915.48	\$309,523.97	\$4,172,515.26	0.052	\$218,575.85
39	96	\$502,832.24	\$32,684.10	\$21,772.64	\$54,456.73	\$4,226,971.99	\$4,199,743.63	\$338,793.32	\$4,565,765.31	0.048	\$221,315.93
40	97	\$525,057.43	\$34,128.73	\$22,734.99	\$56,863.72	\$4,622,629.03	\$4,594,197.17	\$370,613.89	\$4,993,242.92	0.045	\$223,963.19
41	98	\$548,264.97	\$35,637.22	\$23,739.87	\$59,377.10	\$5,052,620.01	\$5,022,931.47	\$405,199.88	\$5,457,819.89	0.042	\$226,520.75
42	99	\$572,498.28	\$37,212.39	\$24,789.18	\$62,001.56	\$5,519,821.46	\$5,488,820.68	\$442,783.16	\$5,962,604.62	0.038	\$228,991.65
43	100	\$597,802.70	\$38,857.18	\$25,884.86	\$64,742.03	\$6,027,346.65	\$5,994,975.64	\$483,614.68	\$6,510,961.34	0.036	\$231,378.82
44	101	\$624,225.58	\$40,574.66	\$27,028.97	\$67,603.63	\$6,578,564.97	\$6,544,763.15	\$527,966.04	\$7,106,531.01	0.033	\$233,685.08
45	102	\$651,816.35	\$42,368.06	\$28,223.65	\$70,591.71	\$7,177,122.72	\$7,141,826.87	\$576,131.17	\$7,753,253.90	0.030	\$235,913.17
46	103	\$680,626.64	\$44,240.73	\$29,471.13	\$73,711.86	\$7,826,965.76	\$7,790,109.83	\$628,428.16	\$8,455,393.92	0.028	\$238,065.73
47	104	\$710,710.33	\$46,196.17	\$30,773.76	\$76,969.93	\$8,532,363.85	\$8,493,878.89	\$685,201.21	\$9,217,565.06	0.026	\$240,145.30
48	105	\$742,123.73	\$48,238.04	\$32,133.96	\$80,372.00	\$9,297,937.06	\$9,257,751.06	\$746,822.78	\$10,044,759.84	0.024	\$242,154.36
49	106	\$774,925.60	\$50,370.16	\$33,594.28	\$83,924.44	\$10,128,694.28	\$10,086,722.06	\$813,695.87	\$10,947,380.15	0.022	\$244,095.28
50	107	\$809,177.31	\$52,596.53	\$35,037.38	\$87,633.90	\$11,030,014.05	\$10,986,197.10	\$886,256.52	\$11,916,270.57	0.021	\$245,970.36
51	108	\$844,942.95	\$54,921.29	\$36,586.03	\$91,507.32	\$12,007,777.89	\$11,962,024.23	\$964,976.49	\$12,972,754.39	0.019	\$247,781.84
52	109	\$882,289.42	\$57,348.81	\$38,203.13	\$95,551.94	\$13,068,306.33	\$13,020,530.36	\$1,050,366.18	\$14,118,672.52	0.018	\$249,531.85
53	110	\$921,286.62	\$59,883.63	\$39,891.71	\$99,775.34	\$14,218,447.86	\$14,168,560.19	\$1,142,977.75	\$15,361,425.61	0.016	\$251,222.48
54	111	\$962,007.49	\$62,530.49	\$41,654.92	\$104,185.41	\$15,465,611.02	\$15,413,518.31	\$1,243,408.52	\$16,709,019.54	0.015	\$252,855.72
55	112	\$1,004,528.22	\$65,294.33	\$43,496.07	\$108,790.41	\$16,817,809.95	\$16,763,414.74	\$1,352,304.67	\$18,170,114.62	0.014	\$254,433.53
56	113	\$1,048,928.36	\$68,180.34	\$45,418.60	\$113,598.94	\$18,283,713.56	\$18,226,914.09	\$1,470,365.16	\$19,754,078.72	0.013	\$255,957.76
57	114	\$1,095,291.00	\$71,193.91	\$47,426.10	\$118,620.02	\$19,872,698.73	\$19,813,388.72	\$1,598,346.07	\$21,471,044.80	0.012	\$257,430.23
58	115	\$1,143,702.86	\$74,340.69	\$49,522.33	\$123,863.02	\$21,594,907.82	\$21,532,976.31	\$1,737,065.20	\$23,331,973.02	0.011	\$258,852.69
59	116	\$1,194,254.53	\$77,626.54	\$51,711.22	\$129,337.77	\$23,461,310.78	\$23,396,841.90	\$1,887,407.10	\$25,348,717.89	0.010	\$260,226.82
60	117	\$1,247,040.58	\$81,057.64	\$53,996.86	\$135,054.49	\$25,483,772.38	\$25,416,245.13	\$2,050,328.49	\$27,534,100.87	0.009	\$261,554.27

Table 9.21 Present Value of Payments for O-9

Retiree Age at Death (Table 4)	Spouse Age at Retiree Death (Table 5)	Spouse Age at Death (Table 4, using setback)	Value of Retiree's Retirement Pay at Time of Death	Spouse receives 55% Up to Age 62, 35 % Age 62 or Older	Present Value Factor	Present Value	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
81	76	89					
	76		\$262,825.67	\$91,988.98	0.155	\$14,282.76	\$14,282.76
	77		\$274,442.56	\$96,054.90	0.144	\$13,800.37	\$28,083.13
	78		\$286,572.93	\$100,300.52	0.133	\$13,334.27	\$41,417.40
	79		\$299,239.45	\$104,733.81	0.123	\$12,883.91	\$54,301.32
	80		\$312,465.83	\$109,363.04	0.114	\$12,448.77	\$66,750.08
	81		\$326,276.82	\$114,196.89	0.105	\$12,028.32	\$78,778.40
	82		\$340,698.26	\$119,244.39	0.097	\$11,622.07	\$90,400.47
	83		\$355,757.12	\$124,514.99	0.090	\$11,229.54	\$101,630.01
	84		\$371,481.59	\$130,018.56	0.083	\$10,850.27	\$112,480.28
	85		\$387,901.07	\$135,765.38	0.077	\$10,483.81	\$122,964.08
	86		\$405,046.30	\$141,766.20	0.071	\$10,129.72	\$133,093.81
	87		\$422,949.35	\$148,032.27	0.066	\$9,787.60	\$142,881.40
	88		\$441,643.71	\$154,575.30	0.061	\$9,457.03	\$152,338.43

Table 9.22 Present Value of Benefits for O-9

Average Retirement Age/Number of Years of Service	End of Year	Age at End of Year	Yearly Retired Pay	Retiree Cost (6.5% x column 4)	Govt. Cost (4.33% x column 4)	Each Year's Total Contribution	Aggregate Contribution	Average Aggregate Contribution	Return Based on Rate of Return (Table 8)	End of Year Aggregate Value of Contributions	Present Value Factor	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age 58												
35 Years									8.067%			
1	59	\$113,400.00	\$7,371.00	\$4,910.22	\$12,281.22	\$12,281.22	\$12,281.22	\$6,140.61	\$495.36	\$12,776.58	0.925	\$11,822.51
2	60	\$118,412.28	\$7,696.80	\$5,127.25	\$12,824.05	\$12,824.05	\$25,000.63	\$19,188.61	\$1,547.95	\$27,148.58	0.856	\$23,245.39
3	61	\$123,646.10	\$8,037.00	\$5,353.88	\$13,390.87	\$13,390.87	\$40,539.45	\$33,844.01	\$2,730.20	\$43,269.65	0.792	\$34,282.14
4	62	\$129,111.26	\$8,392.23	\$5,590.52	\$13,982.75	\$13,982.75	\$57,252.40	\$50,261.02	\$4,054.56	\$61,306.95	0.733	\$44,945.80
5	63	\$134,817.98	\$8,763.17	\$5,837.62	\$14,600.79	\$14,600.79	\$75,907.74	\$68,607.35	\$5,534.55	\$81,442.30	0.678	\$55,248.98
6	64	\$140,776.93	\$9,150.50	\$6,095.64	\$15,246.14	\$15,246.14	\$96,688.44	\$89,065.37	\$7,184.90	\$103,873.34	0.628	\$65,203.84
7	65	\$146,999.27	\$9,554.95	\$6,365.07	\$15,920.02	\$15,920.02	\$119,793.36	\$111,833.35	\$9,021.60	\$128,814.96	0.581	\$74,822.16
8	66	\$153,496.64	\$9,977.28	\$6,646.40	\$16,623.69	\$16,623.69	\$145,438.64	\$137,126.80	\$11,062.02	\$156,500.66	0.537	\$84,115.29
9	67	\$160,281.19	\$10,418.28	\$6,940.18	\$17,358.45	\$17,358.45	\$173,859.12	\$165,179.89	\$13,325.06	\$187,184.18	0.497	\$93,094.23
10	68	\$167,365.62	\$10,878.77	\$7,246.93	\$18,125.70	\$18,125.70	\$205,309.88	\$196,247.03	\$15,831.25	\$221,141.12	0.460	\$101,769.58
11	69	\$174,763.18	\$11,359.61	\$7,567.25	\$18,926.85	\$18,926.85	\$240,067.98	\$230,604.55	\$18,602.87	\$258,670.84	0.426	\$110,151.60
12	70	\$182,487.71	\$11,861.70	\$7,901.72	\$19,763.42	\$19,763.42	\$278,434.26	\$268,552.55	\$21,664.13	\$300,098.40	0.394	\$118,250.19
13	71	\$190,553.67	\$12,385.99	\$8,250.97	\$20,636.96	\$20,636.96	\$320,735.36	\$310,416.88	\$25,041.33	\$345,776.69	0.365	\$126,074.93
14	72	\$198,976.14	\$12,933.45	\$8,615.67	\$21,549.12	\$21,549.12	\$367,325.81	\$356,551.25	\$28,762.99	\$396,088.80	0.337	\$133,635.07
15	73	\$207,770.89	\$13,505.11	\$8,996.48	\$22,501.59	\$22,501.59	\$418,990.38	\$407,339.59	\$32,860.08	\$451,450.47	0.312	\$140,939.54
16	74	\$216,954.36	\$14,102.03	\$9,394.12	\$23,496.16	\$23,496.16	\$474,946.63	\$463,198.55	\$37,366.23	\$512,312.85	0.289	\$147,996.97
17	75	\$226,543.75	\$14,725.34	\$9,809.34	\$24,534.69	\$24,534.69	\$536,847.54	\$524,580.20	\$42,317.88	\$579,165.42	0.267	\$154,815.72
18	76	\$236,556.98	\$15,376.20	\$10,242.92	\$25,619.12	\$25,619.12	\$604,784.55	\$591,974.99	\$47,754.62	\$652,539.17	0.247	\$161,403.84
19	77	\$247,012.80	\$16,055.83	\$10,695.65	\$26,751.49	\$26,751.49	\$679,290.65	\$665,914.91	\$53,719.36	\$733,010.01	0.229	\$167,769.12
20	78	\$257,930.76	\$16,765.50	\$11,168.40	\$27,933.90	\$27,933.90	\$760,943.91	\$746,976.96	\$60,258.63	\$821,202.54	0.212	\$173,919.09
21	79	\$269,331.30	\$17,506.53	\$11,662.05	\$29,168.58	\$29,168.58	\$850,371.12	\$835,786.83	\$67,422.92	\$917,794.05	0.196	\$179,881.03
22	80	\$281,235.75	\$18,280.32	\$12,177.51	\$30,457.83	\$30,457.83	\$948,251.88	\$933,022.96	\$75,266.96	\$1,023,518.84	0.181	\$185,601.94
23	81	\$293,666.37	\$19,088.31	\$12,715.75	\$31,804.07	\$31,804.07	\$1,055,322.91	\$1,039,420.87	\$83,850.08	\$1,139,172.99	0.168	\$191,148.63
24	82	\$306,646.42	\$19,932.02	\$13,277.79	\$33,209.81	\$33,209.81	\$1,172,382.80	\$1,155,777.89	\$93,236.60	\$1,265,619.40	0.155	\$196,507.66
25	83	\$320,200.19	\$20,813.01	\$13,864.67	\$34,677.68	\$34,677.68	\$1,300,297.08	\$1,282,958.24	\$103,496.24	\$1,403,793.32	0.144	\$201,685.36
26	84	\$334,353.04	\$21,732.95	\$14,477.49	\$36,210.43	\$36,210.43	\$1,440,003.76	\$1,421,898.54	\$114,704.56	\$1,554,708.31	0.133	\$206,687.87
27	85	\$349,131.44	\$22,693.54	\$15,117.39	\$37,810.94	\$37,810.94	\$1,592,519.25	\$1,573,613.78	\$126,943.42	\$1,719,462.67	0.123	\$211,521.08
28	86	\$364,563.05	\$23,696.60	\$15,785.58	\$39,482.18	\$39,482.18	\$1,758,944.85	\$1,739,203.76	\$140,301.57	\$1,899,246.42	0.114	\$216,190.73
29	87	\$380,676.74	\$24,743.99	\$16,483.30	\$41,227.29	\$41,227.29	\$1,940,473.71	\$1,919,860.06	\$154,875.11	\$2,095,348.82	0.105	\$220,702.34
30	88	\$397,502.65	\$25,837.67	\$17,211.86	\$43,049.54	\$43,049.54	\$2,138,398.35	\$2,116,873.59	\$170,768.19	\$2,309,166.55	0.097	\$225,081.24
31	89	\$415,072.27	\$26,979.70	\$17,972.63	\$44,952.33	\$44,952.33	\$2,344,118.87	\$2,321,642.71	\$188,093.62	\$2,542,212.49	0.090	\$229,272.60
32	90	\$433,418.46	\$28,172.20	\$18,767.02	\$46,939.22	\$46,939.22	\$2,589,151.71	\$2,565,682.10	\$206,973.58	\$2,796,125.29	0.083	\$233,341.39
33	91	\$452,575.56	\$29,417.41	\$19,596.52	\$49,013.93	\$49,013.93	\$2,845,139.22	\$2,820,632.25	\$227,540.40	\$3,072,679.62	0.077	\$237,272.43
34	92	\$472,579.40	\$30,717.66	\$20,462.69	\$51,180.35	\$51,180.35	\$3,123,859.97	\$3,098,269.80	\$249,937.42	\$3,373,797.40	0.071	\$241,070.38
35	93	\$493,467.41	\$32,075.38	\$21,367.14	\$53,442.52	\$53,442.52	\$3,427,239.92	\$3,400,518.66	\$274,319.84	\$3,701,559.76	0.066	\$244,739.72
36	94	\$515,278.67	\$33,493.11	\$22,311.57	\$55,804.68	\$55,804.68	\$3,757,364.44	\$3,729,462.10	\$300,855.71	\$4,058,220.15	0.061	\$248,284.81

Table 9.23 Present Value of Payments for O-10

37	95	\$538,053.99	\$34,973.51	\$23,297.74	\$58,271.25	\$4,116,491.39	\$4,087,355.77	\$329,726.99	\$4,446,218.38	0.057	\$251,709.84
38	96	\$561,835.97	\$36,519.34	\$24,327.50	\$60,846.84	\$4,507,065.22	\$4,476,641.80	\$361,130.69	\$4,868,195.91	0.052	\$255,018.86
39	97	\$586,689.12	\$38,133.49	\$25,402.77	\$63,536.27	\$4,931,732.18	\$4,899,964.04	\$395,280.10	\$5,327,012.28	0.048	\$258,215.79
40	98	\$612,599.90	\$39,818.99	\$26,525.58	\$66,344.57	\$5,393,356.85	\$5,360,184.56	\$432,406.09	\$5,825,762.94	0.045	\$261,304.42
41	99	\$639,676.81	\$41,578.99	\$27,698.01	\$69,277.00	\$5,895,039.93	\$5,860,401.43	\$472,758.58	\$6,367,798.52	0.042	\$264,288.40
42	100	\$667,950.53	\$43,416.78	\$28,922.26	\$72,339.04	\$6,440,137.56	\$6,403,968.04	\$516,608.10	\$6,956,745.66	0.038	\$267,171.28
43	101	\$697,473.94	\$45,335.81	\$30,200.62	\$75,536.43	\$7,032,282.09	\$6,994,513.88	\$564,247.43	\$7,596,529.52	0.036	\$269,956.46
44	102	\$728,302.29	\$47,339.65	\$31,535.49	\$78,875.14	\$7,675,404.66	\$7,635,967.09	\$615,993.47	\$8,291,398.13	0.033	\$272,647.24
45	103	\$760,493.25	\$49,432.06	\$32,929.36	\$82,361.42	\$8,373,759.55	\$8,332,578.84	\$672,189.13	\$9,045,948.68	0.030	\$275,246.82
46	104	\$794,107.05	\$51,616.96	\$34,384.84	\$86,001.79	\$9,131,950.48	\$9,088,949.58	\$733,205.56	\$9,865,156.04	0.028	\$277,758.27
47	105	\$829,206.59	\$53,898.43	\$35,904.65	\$89,803.07	\$9,954,959.11	\$9,910,057.57	\$799,444.34	\$10,754,403.46	0.026	\$280,184.56
48	106	\$865,857.52	\$56,280.74	\$37,491.63	\$93,772.37	\$10,848,175.83	\$10,801,289.64	\$871,340.04	\$11,719,515.86	0.024	\$282,528.59
49	107	\$904,128.42	\$58,768.35	\$39,148.76	\$97,917.11	\$11,817,432.97	\$11,768,474.41	\$949,362.83	\$12,766,795.80	0.022	\$284,793.12
50	108	\$944,090.90	\$61,365.91	\$40,879.14	\$102,245.04	\$12,869,040.84	\$12,817,918.32	\$1,034,021.47	\$13,903,062.31	0.021	\$286,980.84
51	109	\$985,819.71	\$64,078.28	\$42,685.99	\$106,764.27	\$14,009,826.59	\$13,956,444.45	\$1,125,866.37	\$15,135,692.96	0.019	\$289,094.34
52	110	\$1,029,392.94	\$66,910.54	\$44,572.71	\$111,483.26	\$15,247,176.22	\$15,191,434.59	\$1,225,493.03	\$16,472,669.25	0.018	\$291,136.13
53	111	\$1,074,892.11	\$69,867.99	\$46,542.83	\$116,410.82	\$16,589,080.06	\$16,530,874.66	\$1,333,545.66	\$17,922,625.72	0.016	\$293,108.63
54	112	\$1,122,402.34	\$72,956.15	\$48,600.02	\$121,556.17	\$18,044,181.90	\$17,983,403.81	\$1,450,721.19	\$19,494,903.08	0.015	\$295,014.19
55	113	\$1,172,012.53	\$76,180.81	\$50,748.14	\$126,928.96	\$19,621,832.04	\$19,558,367.56	\$1,577,773.51	\$21,199,605.55	0.014	\$296,855.06
56	114	\$1,223,815.48	\$79,548.01	\$52,991.21	\$132,539.22	\$21,332,144.76	\$21,265,875.16	\$1,715,518.15	\$23,047,662.91	0.013	\$298,633.42
57	115	\$1,277,908.13	\$83,064.03	\$55,333.42	\$138,397.45	\$23,186,060.36	\$23,116,861.64	\$1,864,837.23	\$25,050,897.59	0.012	\$300,351.40
58	116	\$1,334,391.66	\$86,735.46	\$57,779.16	\$144,514.62	\$25,195,412.21	\$25,123,154.90	\$2,026,684.91	\$27,222,097.12	0.011	\$302,011.02
59	117	\$1,393,371.78	\$90,569.17	\$60,333.00	\$150,902.16	\$27,372,999.28	\$27,297,548.20	\$2,202,093.21	\$29,575,092.49	0.010	\$303,614.27
60	118	\$1,454,958.81	\$94,572.32	\$62,999.72	\$157,572.04	\$29,732,664.53	\$29,653,878.51	\$2,392,178.38	\$32,124,842.91	0.009	\$305,163.03

Table 9.23 Present Value of Payments for O-10

Retiree Age at Death (Table 4)	Spouse Age at Retiree Death (Table 5)	Spouse Age at Death (Table 4, using setback)	Value of Retiree's Retirement Pay at Time of Death	Spouse receives 55% Up to Age 62, 35 % Age 62 or Older	Present Value Factor	Present Value	Aggregate Present Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
82	77	90					
	77		\$306,646.42	\$107,326.25	0.155	\$16,664.12	\$16,664.12
	78		\$320,200.19	\$112,070.07	0.144	\$16,101.30	\$32,765.41
	79		\$334,353.04	\$117,023.56	0.133	\$15,557.48	\$48,322.90
	80		\$349,131.44	\$122,196.01	0.123	\$15,032.04	\$63,354.94
	81		\$364,563.05	\$127,597.07	0.114	\$14,524.34	\$77,879.28
	82		\$380,676.74	\$133,236.86	0.105	\$14,033.79	\$91,913.07
	83		\$397,502.65	\$139,125.93	0.097	\$13,559.81	\$105,472.88
	84		\$415,072.27	\$145,275.29	0.090	\$13,101.83	\$118,574.71
	85		\$433,418.47	\$151,696.46	0.083	\$12,659.33	\$131,234.04
	86		\$452,575.56	\$158,401.45	0.077	\$12,231.77	\$143,465.80
	87		\$472,579.40	\$165,402.79	0.071	\$11,818.64	\$155,284.45
	88		\$493,467.41	\$172,713.59	0.066	\$11,419.48	\$166,703.93
	89		\$515,278.67	\$180,347.53	0.061	\$11,033.79	\$177,737.72

Table 9.24 Present Value of Benefits for O-10

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